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L. C. Raines

A Modified Delineation of the Will

A MODIFIED DELINEATION OF THE WILL.

BY

LESTER COURTNEY RAINES
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I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER MY SUPERVISION BY Lester Courtney Raines

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Christian A. Ruckmick
In Charge of Thesis

Head of Department

Recommendation concurred in*

Committee on Final Examination*

*Required for doctor's degree but not for master's

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C H A P T E R I

A BRIEF HISTORY OF THE TERM "WILL"

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CHAPTER I

A BRIEF HISTORY OF THE TERM "WILL".

Since the science of psychology had some of its origins in philosophy, it is fitting for us in tracing the historical development of a psychological term to follow its rise from the earliest Greek philosophers to the present time.

Writers differ in their interpretation of the term will. To some it is a thing in itself, complete and elemental; to others it is a part of the soul; and others use it to designate various functions of the mind in action. It is, of course, essential to understand the points of view of the various authorities in order to understand their concepts of the terms will and volition (or act of willing).

The problem of the 'freedom of the will' perplexed the ancients and we find vigorous controversies concerning the primacy of the will as opposed to the primacy of the intellect. The problem of 'freedom of the will' is of special concern to ethics and is now relegated as such. It need not concern us in this study. Colvin (14)# states, however, "that empirical psychology must affirm the freedom of the will. It may leave to metaphysics the ultimate question of freedom and determinism, but for itself as psychology, it knows no mechanical necessity. Man may be metaphysically determined, he is empirucally free." Woodworth(79),on the other hand, says that the 'freedom of the will' is limited by the forces inherent in the individual's nature. He agrees with our stand in relegating the problem of 'freedom of the will' to philosophy.

Numbers refer to items in the bibliography. See appendix.

Turning to the Greek philosophers, we find that their discussion concerned the will as related to the reason and to right doing and living. Socrates (13) develops the notion that the will is wither nothing at all or simply the reason when it is in action. Man has by nature a tendency to strive after happiness and this is the root of all desire. Man should desire the good. Socrates is thus connecting motivation of action with correct knowledge and insight. Plato (35) maintains the same notion in regard to the connection of right knowledge and decision, although placing his emphasis on rationalization rather than on conduct or activity. (9) He maintains a purely psychological freedom but adheres to the Socratic doctrine that the evil man, wanting in right knowledge does not act with freedom.

Aristotle (58), as is characteristic of Greek philosophy, accommodates feeling and will to the rational side of human nature. He makes volition a form of desire and makes the point of which we shall hear later, that every desire aims at something. The perfect will is a conation completely rationalized. For Aristotle perfect will must appear right in the light of reason; the life of feeling is a lower existence to which man only descends when he fails to maintain the dignity of his rational nature. The ideal character is that of the man who never fails to act from reason.

The Stoics, in discussing the freedom of the will, generally ended in an unequivocal determinism. Aside from the discussion of freedom, we find that Zeno (58) makes will one of the desirable qualities of the mind. He says "there are three

good dispositions of the mind: joy, caution, and will. Will is the opposite of desire since it is a rational wish. Under the head of will are classed goodwill, placidity, salutation and affection."

Gregory of Nyssa (58) seems to regard the mind as exercising will to cause action. He says, "Those who give precedence to the heart as the seat of the intellect regard its location as a proof of their affirmation as it occupies the central part of the whole body. For this reason the exercises of the will can easily be transmitted from the center throughout the whole body and can thus proceed into action." Gregory is one of the first faculty psychologists. He designates the various parts of the soul as mental faculties in contrast to Augustine who insists upon the strict unity of the soul. Later writers, especially the Neo-platonists, modified and combined the doctrines of the Stoics and Platonists. Will is mentioned only occasionally. Origen (13) calls the will "rational desire" and affiliates it with love and reason. Galen (13) says that the will is wholly dependent upon the temperament.

The early theologians of the Christian era also discuss the matter of freedom of choice. They consider problems different from those presented in the ancient theory of unequivocal determination of the will by the idea of the good. St. Augustine (9,17,58), gathering the results of what was best in Greek psychological thought, comes to the conclusion that mental life shows itself in three fundamental functions: intellect, will, and self-conscious memory. All are interdependent and interactional. He displaces the primacy of idea for the

primacy of the will. The doctrine of freedom of Augustine has led to numerous disputes in the early theological writings. The dogmas of original sin, divine grace, and predestination colored the views of their various exponents and endless disputes have arisen.

Scholastic period

Psychology is not active after the time of Augustine until the thirteenth century. The writers of the scholastic period give considerable attention to the will. Thomas Aquinas (9,17,35,38) and Duns Scotus in discussing the primacy of the will or the intellect lead up to a severe controversy concerning the problem of the will. Aquinas makes the intellect superior to the will and declares that the will must necessarily strive for that which is recognized by the intellect as good. Of free choice, will decided upon the best of the possibilities shown to it by the intellect. This soon ends in intellectual determinism. Aquinas also makes the division of desire into two grades, sensuous desire and rational will. The Thomists or followers of Thomas Aquinas are important in that they unite the biological and metaphysical conceptions of the mental life.

The Scotists (9,17) or followers of Duns Scotus placed their emphasis on the primacy of the will. Like Aquinas, Scotus believed that will necessarily strove toward happiness. He analyzes will into passive will-actions (caused) and active will-actions (free). With him will is the directing power back of knowledge, intelligence is instrumental and ideas are only occasional causes of ation. In a confused mass of ideas only those are recognized toward which the will spontaneously directs

its attention and thus increases their intensity. This thought has its parallel in modern writers. Some of the pupils of Duns Scotus (35) try to modify the autocracy of the will by approaching slightly the Thomastic point of view, Petreus Aurelous gives the will an intellectual activity dependent upon it and yet not aware of its aim. William of Occam grants will perfect freedom in the sense of arbitrary choice. Ocaam connects the affective side of life with the volitional processes. He is known as an indeterminist.

Classical period.

In the classical period of the problem of freedom of the will we find Buridan (35) saying that the will must have motives in order to decide and is free to decide only when the motives are of equal intensity.

Descartes (17,35) in ascribing all matters of communication between the mind and body to the pineal gland naturally said that the will acted upon the pineal gland and caused it to compel the muscles to serve its purpose. He seems to make the will the instrument by which the soul acts upon the pineal gland, that in turn acting upon the 'spirits' controls the muscular action. True freedom consists herein: with imperfect knowledge to restrain from willing, and with perfect knowledge to allow that knowledge to work as the decisive motive.

Spinoza (6) in his geometrically phrased "Ethics" makes the following propositions:" Prop. 48. There is in the mind no absolute or free will; but the mind is determined to this or that volition by a cause, which has itself been determined by

another cause, this again by another and so on to infinity.
'I mean by will not desire, but the faculty of affirming or denying.'
Prop. 49. There is in the mind not volition, that is, no affirmation or negation, except that involved in an idea in that it is an idea.
Corr. Will and understanding are one and the same thing."
Faculty psychology.

Leaving out of account the various problems that perplexed the writers from Descartes to Wolff, let us turn to a consideration of the faculty psychologists. Wolff (9.17) is the leader of the school. The activity of the soul , says Wolff, takes on different directions, appearing in different 'faculties' of which the logical faculty is fundamental. The active faculty of will is due to the same fundamental movement of the soul. He then reduces will or the 'power to desire' to a dependence on the 'power to know'. Voluntary actions are of the same nature as the effort to bring ideas to greater intensity. Hartley (6), another faculty psychologist, mentions will as one of the five'faculties' of mind.

H. Tappan, in his book on the doctrine of the will(72) states that the mind has three cardinal faculties- intelligence, sensitivity, and will. All doing or causation is comprehended in the third, The three elemental faculties are mutually helpful and interdependent, the first two are necessary and the third is free. The intelligence furnishes the will with laws and rules of determination and action; the sensitivity furnishes it with the inducements of pleasurable excitements to determination and action.

Absolute theory.

Kant (34,51) raises the will into a transcendental faculty. By his sharp distinctions of sense, intelligence, and reason he further entrenches the idea of faculties. He distinguishes intellect, feeling, and will. Intellect and will refer to objects, feeling to the self. The making of the will an absolute faculty solves some of the problems which have perplexed earlier writers and is an introduction to certain philosophical discussions of volition, which follow later. This is evident in Schopenhauer (39,52) who declares that will is the controlling force of mind. For him the will constitutes the inner, true, and indestructible nature of man: in itself it is unconscious. In addition he states that every true act of will must also of necessity be a movement of the body. His concept of will is the basis for his metaphysical system of voluntarism.

Hartman allies this voluntary theory with science by seeking confirmation of the presence of will in nature. This is evidenced by the show of instinct and animal impulse throughout the living world.

Nietzsche (23,45) with his doctrine of the 'Will to power', follows the earlier writers and bases his entire metaphysical system upon voluntarism. He says that "willing is above all something complicated. In all willing, there is first a plurality of sensations, accompanying muscular sensations, secondly a ruling thought, and third the will is, in addition to sensation and thinking, an emotion, the

emotion of command." Nietzsche's entire thought is built upon the notion of the 'Will to power'. It is unfortunate that his great work which was to have set forth this theory is detail was never completed.

Coming back to a consideration of English writers, we find Locke (6,9) at the threshold of empirical psychology (psychology based upon experience). The will receives scant notice. It is an original movement of the mind, an effort motivated by uneasiness. The motive force is represented by the simple ideas of pleasure and pain, which mean uneasiness and power.

Condillac (9) of the French school, who is a sensationalist pure and simple, defines will and impulse as the presence in mind of a dominant idea of advantage or pleasure, and attention as the presence in mind of an intense sensation.

The Germans following Wolff develop a school of 'faculty' psychologists. Fichte (9,17) is the first to repudiate the idea of faculty psychology. He develops what he calls a history of consciousness with will as the moving force. He makes a series of stages with blind impulse on one extreme and free and absolute will on the other. Schelling (17) a follower of Fichte, places even greater emphasis on the evolution of consciousness and brings absolute will-activity as a development of sensation through the stages of productive intuition, reflection, and judgment.

Hegel (17) unites will and idea and declares that they are fundamentally the same. He agrees with Aristotle in that will is reason or morality.

Genetic theories.

From the absolute theories of the will we may turn to what Klemm styles (35) the heterogenetic theories. A heterogenitic theory implies spontaneous generation from other mental phenomena. Herbart (6,24,35), whose system of psychology is purely mechanistic, says that mind is an equilibrium of the idea-forces, and the mental life a constant play of forces in action. The principles which control the play of ideas are persistence, fusion, and inhibition. Will is the consciousness of the dynamic side of the play of ideas--the tension of the idea toward clear presentation, its reaction against inhibition. Each idea below the threshold of consciousness is an impulse or striving toward an idea. When the rising into consciousness of an idea is hindered and consciously inhibited, there is desire, and when it is released by the idea of the end of satisfaction, or when fulfillment is added, it becomes volition proper. Voluntary movements arise by means of the associations of feelings with perceived movements.

Fouillée (24) bases his entire system of thought upon these 'idea-forces'. He recognizes the control of action by the self. If the action toward a certain action is isolated and unopposed the action is certain to ensue. Will is a very complex process needed to bring about action. Attention is will directed toward mental processes.

Mach (40) states that all mental concepts are made up of varying numbers and combinations of what he styles elements. These may be termed sensations if the term

sensation is used in a broad sense. All perceptions, ideas, volition, and emotion are made up of these elements.

Various writers follow Herbart in attempting to derive will from other mental processes. Drobisch, in analyzing mind separates it into masses of ideas. He says concerning will, " our mind possesses will, in so far as it has masses of ideas, whose content represent what is willed, and whose striving exercises a decisive control over other ideas and combinations of ideas." Waitz (35) depicts will as a combination of idea and feeling. Desire is the unpleasant feeling that arises when some pleasant idea is at the same time recognized as not present to the senses.

After the time of Darwin the problem of growth or development by means of evolution enters into psychology. Spencer (36) treats mind as acquired social experience, transmitted by heredity. All concrete mental states are compounds resolvable by analysis. He makes will the mental representation of the act which follows the actual accomplishment of the act. The complex volitional act is preceded by a reproduction of the nervous excitation which actually occurred during a former action.. His governing principles- memory, reason, feeling, and will- are induced as the automatic actions become complex, infrequent, and hesitating. Spencer describes as will the passing of an ideal motor change tending to become a real change at the expense of another ideal motor change. In a voluntary act of the simplest kind, we can find nothing beyond a mental representation of the act, followed by the performance of it. Will disappears as the movements tend to

become automatic. This is the converse of the previous evolution. Thus we learn to walk by will, but as it becomes automatic the child no longer thinks of making his legs move but thinks of the place to which he is going.

Other psychologists, uniting the notions of evolution with observed facts, lead up to a theory that will is a power given partly by inheritance and partly acquired by the individual. This view is a compromise between the theory that voluntary movements are entirely acquired by the individual and the theory that the power of will is derived from inheritance. Bain (5) attempts to coordinate the two previous theories. He holds that a primordial element called spontaneous energy of the body, a predisposition of the moving organs to come into operation of their own accord previous to stimulation, is the basis for development of voluntary movement. Some of these random movements happen by chance to bring the organism into some happy adjustments which are pleasurable. There is an association between the pleasure and the movement which brought it about; and the memory of the pleasure in order to prolong the gratification incites a repetition which serves to fix the adjustment and make the movement more or less automatic. Bain classifies the mental processes as:- the intellect, feeling, and volition. Intellect has three primitive properties-- discrimination, retention, and similarity. In volition there are influences either assisting or obstructing the proper intellectual forces. Association is one of the influences in question according to his theory.

Sully (71) holds that a child is born with certain random, reflex, and instinctive movements. These original involuntary movements bring about a change in the child's condition, whether to lessen discomfort or to introduce a positive element of pleasure, and the child's attention is called to them. The association of pleasure with the movement which caused it is the necessary antecedent to the conscious pursuit of an end.

James (30) also recognizes the importance of random movements as necessary antecedents of voluntary movements. When a movement has once occurred in a random, reflex, or involuntary way, there remains in the memory an image of the movement which can be desired, proposed, and deliberately willed. But sensations and movements must be given before we can have a voluntary act.

Külpe also holds that voluntary action is derived from accidental movements and their consequences. He accepts as far as they go the theories of Herbart, Lotze, and Bain, in their explanation of the origin of voluntary actions through the mechanical connection between the idea of the result and the movement. If this were the only condition, however, there could be no self-determination and man would be a mere machine. Here Külpe accepts the explanation of Wundt (82) who avoids the difficulty by distinguishing between associative and apperceptive connections. The former are the results of given relations between ideas, while the latter imply a comparative and selective activity of the

subject. Will and apperception for Wundt are but phases of the same process. He remarks that in the child we may observe in the first day the earliest beginning of simple volitional acts of an impulsive character. The first reflexes are those caused by hunger. The first movements in which an antecedent motive is to be recognized without a doubt are the grasping movements which begin in the twelfth to the fourteenth week. Here we have the first clear symptoms of sense perception as well as the existence of a simple volitional process made up of motive, decision, and act. Somewhat later intentional imitative movements are to be observed. Very gradually, usually not until after the seventh month, complex volitional acts develop from these simple ones. Wundt differentiates between simple and complex volitional acts and shows that some volitional acts may in some cases become reflex movements when the characteristic feeling of resolution entirely disappears.

Dewey (18) recognizes in the child original motor impulses which have no definite adjustment, but are spent through the whole system and give place to random movements. These original impulses are discharged through the channels of least resistance. These channels are phylogenetically determined. Every movement is accompanied by a sensation which becomes the symbol of the movement. Soon by association we learn what each act stands for and the movement becomes localized as the idea of the act becomes definite. A child at first moved the whole body but later the motor impulse is more definitely directed and only the part willed to be moved

moves. The successive steps in the development of volition according to Dewey are: first, there is awakened the state of mind known as desire, which arises from impulse which has achieved a certain end which it discovered to be pleasant or painful, and the state of mind of either desire or aversion arises. Second, there is the conflict of desires, concluded by the process of deliberation and choice; then the formation of an end of action which serves as the purpose or motive of action. This motive, acting upon the muscles, achieves the goal of the will which is satisfaction.

Preyer's (57) theory is another genetic consideration. He states that many reflexes of the infant at birth are already strongly marked. The coordination of these reflexes with the muscles and pleasant feelings make the development of the will possible. Bair,(6) of the University of Michigan, in some studies on the development of voluntary control, studies the methods and processes involved in acquiring control over a group of muscles rarely used. He selects the retrahens of the ear because of the inability of most people to use it. He makes the following conclusions: learning to use a new muscle is a matter of association with another muscle which can be already used voluntarily; there is no sense of innervation until a movement is effected; in learning a movement the power to contract varies with the fluctuation of attention. First the muscles in the special region must be innervated with the hope that in the general effect there may be an element of the movement sought for. When this movement is once made,

the sensation will be cognized and an effort made to increase the sensation. When the impulse has once reached the muscle the process becomes one of segregation, specialization, and analysis.

With the above let us leave the question of the origin and formation of the will with the thought of Münsterberg (46) who considers all volitional processes as complicated reflexes and attempts biogenetically to trace the evolution of voluntary acts out of useful reflexes. He also analyzes the outer volitional action into its psychological parts, which he finds to be sensations of innervation. If, before a real movement, certain muscle sensations are anticipated, they produce the conscious state called willing.

The various theories of the will are not exactly distinguishable. One author usually contributes parts of several different theories. In the following discussion we have placed each writer according to his outstanding feature or point of emphasis.

Emotional theories

Taking up the 'emotional theory' of the will, we find that Hume (35), early in the eighteenth century, states that will never comes into being without a characteristic affective accompaniment. Bain, as we have already seen, finds that the elements of volition were in a spontaneous activity guided by the feelings. Wundt's (82) emotional theory of the will is a noteworthy one in that it makes feeling, emotion, and will progressive stages of processes. Every emotion made up of

interrelated affective processes may terminate in one of two ways. It may give way to the ordinary course of feelings or it may pass into a sudden change in ideational and affective content, which brings the emotion to a sudden close. Such changes in the sensations and affective state, prepared for by the emotion (and ending the emotion), are called volitional acts. An emotion is of a lower stage than a volitional process just as feeling is a low state of emotion. The emotions which come from sense-feelings and the social emotions of love, hate, anger, revenge are in many cases the common origin of will. A volition is distinguished in such cases from "an emotion only by the fact that the former has added to its emotional components an external act that gives rise to feelings, which, through contrast with the feelings contained in the emotion, bring the emotion itself to an end. There is no feeling or emotion which does not in some way prepare for a volitional act." Wundt divides the volitional processes into simple volitional or impulsive acts; complex volitional processes or voluntary acts in which several feelings or ideas in the emotion tend at the same time toward different external ends; and selective acts or a choice, where there is a conflict of antagonistic motives preceding the act. Volition is divided into two stages. "In contrast to the first stages of a volition, which cannot be clearly distinguished from an ordinary emotional process, the last stages of volition are absolutely characteristic. They are marked by accompanying feelings which never appear anywhere but in volitions, and

must therefore be regarded as specific elements peculiar to volition." These elements are feelings of resolution, feelings of decision and later the feeling of activity. The feelings of resolution accompany the voluntary acts and the feelings of decision the selective acts. The intellectual processes cannot determine volution without arising emotions in some way. They have, however, the power of modifying the emotions, espedially those which prepare for the volitional acts. As we have noted preciously, the volitional acts may retrocede into reflex acts or mechanical processes by an elimination of all psychical elements. (cf. Spencer.p.10)

Lipps (35) evolves another form of emotional theory of volition which ends in metaphysical discussion. For every feeling of effort there is a special psychical activity of striving that is hindered or overcomes hindrances in its natural progress. This theory is too vague and unintelligible to serve our present purposes.

Wundt in addition to the emotional content of will, emphasizes the feeling of innervation. This is also held to be of prime importance in will psychology by Helmholtz, Bain, Mach and others. (10)

Attention theories.

James proposed the theory of the kinaesthetic image in place of the innervation theory. In James' celebrated chapter on the Will, (30) we find these statements concerning the point in question. " A supply of ideas of the various movements that are possible left in the memory by experiences of their involuntary performance is thus the first prerequisite

of the voluntary life. Whether or no there be anything else in the mind at the moment when we consciously will a certain act, a mental conception made up of memory images of these sensations, defining which special act it is, must be there." This last statement is known as James' classical theory of volition. " In perfectly simple voluntary acts, there is nothing else in the mind but the kinaesthetic idea, thus defined, of what the act is to be." Voluntary acts are secondary, not primary functions of our organism. For James the effort of attention is the essential phenomenon of the will. He names the attending of the will to a difficult object and holding it fast before the mind, the fiat. As a physiological consequent it is supposed that immediate motor consequences ensue. James makes a distinction between certain types of character which are important to our study in that they show individual differences in the power of will: namely, the explosive and obstructive types, depending upon the absence or the presence of inhibition or inhibitory powers.

The attentive portion of will calls to mind a statement in a recent work by Hollingworth and Poffenberger (28) which says:" Another characteristic of our original equipment is that out of all the stimuli which affect our sense organs, certain ones come clearly into consciousness while others are crowded out. This means that we are born with a tendency to pay attention to certain kinds of stimuli in preference to others, or that we naturally attend to some kinds of objects. This natural attention is of great importance, for it forms the

foundation of the highest forms of attention.... We are born with the possibility of a certain strength of attention, and it is this difference in the native attentive strength which is responsible for much of the difference in accomplishment of different individuals!"

Pillsbury (53) correlates will and movement and deduces from the fact that since action in general is dependent upon sensation, and attention controls the entrance of sensations, the fact that attention must control action. In acquiring a movement for the first time attention is effective in three ways :- in selecting from chance movements those interesting for further repetition, in selecting the essential part of the complex movements thus acquired for retention, and in choosing from known movements the one best suited for the purpose undertaken. Choice is then but a result of attending to one or two possible sensations or ideas with the corresponding movement. "In general, will may be defined as attention applied to the control of movement."

Titchener (74) says concerning will:" so far as I can see, the term will affords the best general title for two great groups of psychological facts- the facts of attention and the facts of action. " Titchener accepts the theory of Ward and Wundt in regard to the genetic theory of will. Ward says"volition or something analagous to it has in the race as in the individual invariably preceded habit" and Cope declares that "even the autometic 'involuntary' movements of the heart, intestines, reproductive systems, were organized in successive

states of consciousness." Titchener, however, does not agree with Wundt concerning the presence of feeling during the will act thus defined.

Experimental determinations.

Turning to still another sort of theory, we find Stout (68) saying " The mental attitude of voluntary decision is distinguished by the dependence of the act on the belief that we are going to perform it. The preponderance of the idea of the end must involve the mental affirmation that our action shall be directed to its attainments." The 'self' must enter into the decision. The emphasis is thus thrown upon the determining tendencies.

By means of the reaction experiment, (2) Ach brings out the fact that choice is guided by the situation and the mental content. Ach first asks his subjects to move the right finger when a letter E is shown and the left when the letter O was shown. The times required for making each movement are measured. He has found that there is no real decision after the cards are shown but that the movements are made at once because of the previous preparation. When the subject is left free to react with either finger, it is found that more time is taken than when the finger to be moved is prescribed. These facts may be regarded as indicating that the first form of reaction gives play to choice, while the others are determined by the conditions of the experiment, the purpose of the moment. The task or purpose serves to control the choice just as it does to determine association. In

everyday life, the purpose is replaced by the situation or environment and general attitude.

In another experiment of Ach,(1) where the problem is to find a rhyming syllable for a syllable to which a strong association with another non-rhyming syllable has been fixed by repetition, the effort of overcoming association is shown. Ach distinguishes in the choice the following factors: feelings of strain in head, forehaed, and the organs called into play; the factor of the end in view either as intention, visual image or other concepts; the feeling of effort which is found only in very energetic decisions; and the actual feeling of willing, a a personal embracing of the decision, for the self to be momentarily identified with the movement to be made. At the moment the self is thus identified with the alternative, the choice is made and the action ensues.

This theory is also concurred in by Michotte and Prüm (10,35). In Prüm's experiment, numbers are shown and the observer is told to add or subtract. If the observer is told to do either one or the other of the two operations the delay is not noticeable, but if the choice of operations is left to the observer the delay is noticeable as a choice and deliberation are introduced. Unlike Ach, Prüm brings the choice under the experimental conditions. With Ach the choice is made before the observer sees the alternatives. In Prüm's experiment the choice is made during the reaction, after a deliberation and discussion of the motives. Prüm and Michotte, who studied with him, differentiated between decision and consent. The first has a content of 'consciousness of action' which the latter

has not. They also analyze the consciousness of action as a characteristic of truly voluntary acts, taking the form of a personal turning toward one alternative or active designation. In some way the 'self' is identified with the voluntariness of the act.

Barrett (10) in a series of experiments, also upon reaction times, used liquids of differing degrees of pleasantness and unpleasantness. These are tested in advance and designated by symbols which have no other associations than with the liquids. Here the choice is made without any peculiar new activity and the liquid is chosen because of its arrangement by the observer in an order of agreeableness. The motives of choice then are effective because they appeal to certain instinctive, habitual and social traits in a man's nature. Concerning the learning process, Barrett advocates the strengthening of the underlying motives.

It is impossible at this time to summarize all the experimental work that has been accomplished, hence the above meagre account must suffice.

Training of the will.

Speaking of the problem of education of the will brings us to a consideration of Payot's treatise on that subject (52). Payot urges the study of the will as a means of becoming as we desire to be. Among the traits which he ascribes to the will are persistence, sustained attention, capacity of being influenced, and the power of distinguishing and choosing the pleasant. His treatise is not scientific or theoretical but

the above traits seem to be worth our attention as making up what is known as the <u>will</u>. In regard to training the <u>will</u> we do not venture an opinion. In fact there seem to be differences among the authorities of the day. Judd and Thorndike indicate that it is possible but Angell refers to training of the <u>will</u> as "mere twaddle".

C H A P T E R II

CURRENT CONCEPTIONS OF THE TERM "WILL"

CHAPTER II

SOME CURRENT CONCEPTIONS OF THE TERM "WILL".

"What is the human will? Just one of our characteristic operations which shows itself in desire and in delight. We are led to do things, to take food and drink, to move from place to place, to adapt and fix the whole course of our actions which move, now slowly, now quickly, sometimes disjointedly, sometimes continuously, sometimes along the curve, often down the tangent, by our desires. In most things, great and small, we can easily unearth the desire, the tendency toward the satisfaction of some wish or craving, which shows the will in action. On the attainment of our wish, desire gives way to delight. We rejoice in what we hold or possess, in the power acquired, or in the means at our disposal. Desire shows the action of the will in urging us forward: delight shows the action of the will in possession. We delight in what we have: we desire what we have not." (76)

This passage, found in a current periodical, suggests an investigation of the modern conceptions of the <u>will.</u> Current writers differ in general with regard to the four standpoints of structuralism, functionalism, behaviorism, and dynamism. The majority of modern psychologists define <u>will</u> from a structural point of view. Because of the bewildering overlapping of definitions and varying usage of terms, it is almost hopeless to attempt an exact classification of contemporary opinion.

Baldwin (8) calls <u>will</u> the form that the process of

accomodation takes on when the central processes become complex. In his encyclopedia of philosophy and psychology (7) he gives three definitions for will: 1. Conation, (the theoretical active element of consciousness showing itself in tendencies, impulses, desires, and acts of will, unrest. It exists when and in so far as a present state of consciousness tends by its intrinsic nature to develop into something else.) 2. That conative organization of which volition is the terminus or end state. 3. Volition, the settlement by the self of a psychic issue; the adoption of an end.

The definition of Preese (12) follows. "Will has been identified with the intellectual functions, again with the feelings and emotions, and still again has been donsidered as an absolute and independent function of the mind."

Titchener, as has been stated previously, gives will as a class term for the facts of attention and action. He admits that the "definition, however, is extremely fluctuating".

Those writers who classify mental processes into three classes - knowledge, feeling, and volition - have a place provided for the will; but those who have only two classes - knowledge and active processes - place will under the active processes. Judd (32) classifies mental processes according to nervous processes: sensations, attitudes, fusions of sensations, memories, ideas. "Voluntary choice is the phrase employed to mark off the highest forms of behavior from the lower forms. The concept of personality must enter in." Thorndike states that the special psychology of will is not

chiefly a descriptive account of the feelings connected with conduct, but an account of capacities for action and habits of action and of the connections between thoughts and acts. He subscribes to the threefold classification mentioned above.

In many writers the word will has assumed something of a metaphysical character. Ruckmick (63) suggests the use of the term "volition" in order to avoid suggestion to this previous usage. He classes will as a development of the executive function of consciousness or action in its highest state, with the qualification that the self or individuality of the person enters in to give the act approval.

For Ladd (37), speaking from the point of view of the structuralist, "will is a word used to express a grouping of mental phenomena", a grouping which is subtle and complex. According to his theory, the development of will is development of knowledge as to ends to be chosen and realized, and as to means for the realization of the chosen ends; development of feeling in the formation of emotions, sentiments, and desires; development of skill in the use of motor mechanism, whether external and obvious or internal and concealed. By volition he understands "a definite conative activity consciously directed toward the realization of a mentally represented end, preceded or accompanied by the condition of desire, and usually accompanied or followed by the feeling of effort".

Martin (41) bases his definition of the will on a belief that it is a personal ability of decision and action, calm, attentive, and reflective, which is evolved through the

senses of reasonable and moral activity. He terms it a complex form of activity, the most infinitely complex of all, having at stake a number of unheard of psychical elements of all kinds, sensations, ideas, sentiments, movements, like a precious acquisition but difficult and delicate, so that the slightest injury to its principal functions risks soon harming it.

Hoernle (27), making a compromise between the notion of the will as a simple and unalyzable process and the view that will is a complex of other mental processes, formulates his principle of psychic wholes. According to this principle will is a process analyzable into elements, an experience with a determinate structure yet at the same time as a whole with a character which cannot be disintegrated. This view is a compromise between that of the dynamic psychologist and the structural psychologist. Münsterberg (45) divides psychology into two classes, causal and purposive, and discusses will under the first grouping. Will suggests the common factor in all the inner activities. There is a will factor in attention and thought and constructive imagination as well as in desire and impulse, decision and choice. "As soon as the will is looked on as an objective process it can and must be resolved into elements, each of which in itself is without will character." The form of the combination of these elements constitutes the process of inner activity. The will is then complex as much as an idea is complex.

Höffding states that "willing in all its developed manifestations implies knowledge and feeling with reference to

means and ends". According to Ebbinghaus (21) willing may be defined as instinct which foresees its end. "There is no will in the sense of a simple faculty, always remaining identical with itself, merely changing its direction, now applying to this thing and now to that. Will is an abstract word, referring to that which is common to all states of willing".

Ogden (49) also sees the self as a factor in the will complex. A voluntary reaction is one which is initiated by a characteristic moment of egotistic direction. "I myself, am actuating the process". This direction is not aimless but is conscious in its activity. This consciousness of a self-determined act does not appear in any other form of mental happening. He also states that voluntary reactions differ from others in that they are more variable. Muscular co-ordinations and inhibitions of the most variable sort are brought into play.

This idea of the self is stressed in a legal psychology by Arnold (4). According to his conception of will the essential factor is an idea. This idea determines change in the self and produces its own realization. Arnold's problem is to determine the legal points between intention, impulse, and will.

Calkins (16) calls will and faith the assertive active relations of the self to its environment. Will is a consciousness of the active connection of the individual to other selves or things, "an egotistic, imperious relation, a domineering mood, a sort of bullying attitude. "In will I am actively, assertively, related to my environment, I am conscious of my

superiority and my independence of it, I conceive it as existing mainly for my own use or gratification. Every leader or captain among men is thus an embodiment of will: .....whatever his position, if he consciously imposes himself on others, if he moulds to his ideals, on the one hand, their civic functions, their forms of worship or their literary standards, or, on the other hand, their furniture and their means of transportation, he stands to them in the relation of imperious, domineering, willing self."

Goddard (25), structurally speaking, states that the volitional action or will is a matter of the neuron patterns, which in turn are dependent upon inheritance plus experience. Immature mind, including mental defectiveness, is weak in volitional action because of lack of association neurons. Ribot (30) emphasizes the fact of inhibition. His diseases of the will consist of impairments, which consist of 1. defect of impulse, 2. excess of impulse, 3. impairments of voluntary attention, 4. caprices, instability, and extinctions of the will, ecstasy and somnambulism.

Another pathologist, Störring (30) speaks of three types of abnormality in will: the first, an abnormality arising from a low intensity of feelings; the second, loss or weakness of will owing to conflicting ideas; and the third, irregularities resulting from kinaesthetic conditions. The first two are dependent upon emotional conditions. Störring disagrees with other writers who emphasize the fact that pleasant feelings cause will action. Unpleasant feelings may be facilitory as

well as inhibitory.

For Woodrow (84), defects of will may be of two sorts, direct and indirect. A direct defect is weakness of will, a lack of persistence, an incapacity to bring about any action that requires considerable effort. An indirect defect is an exaggerated automatism. By will Woodrow means control exerted by attention and reason over natural tendencies. Emotions and instincts are closely related to it. By a strong will he means "that the individual accords with the behavior he anticipates and regards as desirable; that his acts are consistent with his conception of what is wise and right, that resolutions are not facilely broken; and that unreasonable impulsive or automatic acts are properly inhibited".

Horne (21) gives will two meanings, broad and narrow ones. In the narrow sense will is deliberation issuing in conscious choice, action mediated by ideas. In the broad sense it is the whole mind active. Horne's development of will is as follows: 1. spontaneous action, initiated in young organisms by growth and nutrition of nervous system; 2. reflex action, due to sensitiveness of nervous system to external stimuli; 3. instinctive action; 4. impulsive action; 5. imitative action; 6. suggested action; 7. habitual action; and 8. chosen action.

Royce (60) suggests that will involves the attentive guidance of our conduct. We can will only that which we have done before.

According to Münsterberg (46) "we start with the

automatic movement, develop it into the will movement, organize a number of them into more complex will movements, and repeat the combination until it becomes itself habitual and thus an automatic movement at the service of more remote will ends".

Some of the writers in suggesting methods for the training of the will make interesting steps in the learning process. Read (59) in his introductory psychology places the training of the will under the guidance of five factors; namely, 1. furnishing the mind with a useful body of ideas; 2. building up of proper interests and the habit of giving attention to useful and worthy purposes; 3. the forming of firm association between ideas and actions, or the forming of a good set of habits; 4. reference to the strength of purpose or initiative; 5. discipline which results in the pleasant or unpleasant consequences of conduct. The fourth point is important in our study. There seems to be a fundamental difference in native force as between different pupils. Some boys are much more ambitious than others. Some have a greater degree of active attention. Pillsbury (54) gives the following steps in the training of will: 1. choice as a matter of habit; 2. development of a system of ideals; 3. making the individual act according to his ideals. Hollingworth and Poffenberger (28) state that one of the most important conclusions drawn from experimental work on learning is the necessity for the intention or the "will to learn", in order that things shall be remembered. Only the things that one wills to learn can one remember. Walsh (77) ascribes the ability of the American soldier to under-

go hardships and danger in the recent war to his will-power. Upon will depend health and recovery from disease. Will may be cultivated by keeping the faculty of effort at work. "Conscious use of the will at all times is a mistake except at the beginning of a series of activities. A will that is too self-conscious defeats itself". The will can be trained only by the accomplishment of difficult things day after day until its energies are aroused and the individual becomes conscious of his own powers and the ability to use them whenever he really wishes.

It is a curious fact that Watson (80), the foremost behaviorist of the day, does not mention will. This is quite a contrast to the idea of Barrett and others who advocate a psychology based upon Will. Watson says in his introduction: "The reader will find no such terms as sensation, perception, attention, will, image and the like. These terms are in good repute, but I have found that I can get along without them..... I frankly do not know what they mean, nor do I believe that anyone else can use them consistently." We are certainly in agreement with his last point, although we can hardly subscribe to the former ones. Will is undoubtedly a much abused term in psychology from ancient days to the present time.

Jung (33), one of the Freudians or dynamists, defines will as a function that is directed by our powers of reflection. It depends upon how our powers of reflection are constituted. There is no human forethought that can enable us to give our lives a prescribed direction, except for quite a short distance.

Much of our destiny can certainly be attained by means of will-power. But having regard to the fate of certain personalities with particularly strong wills, it is entirely misleading for us to want to change our own fate by power of *will*.

Woodworth in his "Dynamic Psychology" (79) makes anger, zeal, determination, and willing closely allied. They are aroused by the same stimulus, - obstruction encountered in the pursuit of some end. Willing is the development of fresh motive power. This motive power comes by more complete arousal of something active by an obstruction.

Calkins describes the volitional acts as including sensational consciousnesses, perceptual and imagined, of movement and unsensational experiences of realness, of futurity and of the dependence of the future end upon present volition. She analyzes the form of *will* into the following scheme:

1. Will to Act (Outer Volition)
   - a Simple
     - ' With resident end
     - " With remote end
   - b Choice
     - ' Without effort (with resident or remote end)
     - " With effort (with resident or remote end)
2. Will to Think (Inner Volition)
   - a Simple
   - b Choice
     - ' Without effort
     - " With effort

Yerkes' volitional consciousness is the consciousness which prepares us for action and impels us thereto. (87) According to Miller (44) "intellect, feeling, and *will* are not so much structural as functional distinctions. *Will* is not

an independent thing; it is merely the control of action by ideas". Other functionalists are of much the same opinion. To summarize a few of them: Angell (3) says "the term will is simply a convenient appellation for the range of mental life viewed from the standpoint of its activity and control over movement." Pillsbury (54) states that "what one ordinarily calls will is exerted primarily in the control of the course of thought, and action follows when the proper thought presents itself." The problem of choice lies between one line that is attractive and another that is repulsive. "Will may be defined as the sum of the conditions of choice. It is the outcome of the entire original disposition of the individual, together with its modifications by experience. It is no new thing or force; it is the application to the control of action of all the influences that control attention, perception, and the course of ideas. In general, voluntary acts are those which grow out of a conflict between instincts and ideals in which ideals prevail." Later (55) he says that will is a term to designate the whole man active, to distinguish between the acts that imply choice as opposed to the acts that are automatic.

From the standpoint of the physiological psychologist the will is the power of the cerebral processes to raise the reflex to the higher levels. Attention as well as the pleasure-pain notion is shown to be an additional element. Ladd and Woodworth (38) call the power of controlling the bodily processes nerve energy. Sherrington (64) remarks that the change from reflex to volitional action is not abrupt. The purpose of

movement rather than the method of movement is attended to in the higher form.

Meuman (43) considers as the chief part of the volitional process the phenomenon of selection that is occasioned by approved ideas directed toward a certain end. Stratton (70) states that will has an element of imitation and suggestion. This factor of suggestibility is included in the following test as it seems that it plays an important part in the volitional makeup. In Haddock's popular rather than scientific treatise on the power of will (26) we find the following suggestions as to the attributes of will. "Acts of will may be described as explosive, restraining, impelling, deliberative, persistent, and decisive." Will is the mind's power of self direction as well as the power by which it acts upon the body.

Ach (1) states that the will-act is peculiarly suitable for bringing to light temperamental differences and suggests a new temperament, that of the deliberative (besonnene) type.

Washburn (78) in her motor theory of mental processes makes a so-called 'activity attitude' the controlling factor of the will. No matter how much or how little stimulation is present, if the activity attitude is not present the action does hot take place.

It will be seen from the foregoing opinions that the current conceptions of the will are as diversified as the opinions of the ancients. The difference lies in the placing of emphasis upon one especial factor of the will complex. Most writers agree as to the complexity of the will (Ladd, Martin,

Münsterberg, Hoernle, and Ebbinghaus) and an equal number say that the inclusion of the 'self' of the individual is necessary (Ruckmick, Judd, Ogden, Arnold, Calkins). For certain writers (Titchener, Münsterberg, Woodrow, and Royce) attention is a factor in the will process. According to others (Titchener, Thorndike, Calkins, Pillsbury, Yerkes, Angell, and Washburn) action is necessary. The majority of those who mention the point agree that the will may be trained (Payot, Judd, Thorndike, Walsh, Read, and Pillsbury).

The will is considered by several a guiding principle or method of control (Hollingworth, Poffenberger, Walsh, Jung, Woodworth, and Angell). Others (Ribot, Woodrow, and Woodworth) concur in the opinion that inhibition or obstruction is necessary for the will to function. The genetic theories have been discussed in the previous chapter.

Certain authors (Störring, for example) believe that feelings and emotions influence the will. Still others (of which group Stratton is a representative) insist that imitation and suggestion may be contributory factors.

Ideas are considered by some authorities (Arnold, Störring, Horne, Miller, and Meuman) as controlling or guiding the will; others (Hoffding, Ladd, Ebbinghaus, and Woodworth) insist that the idea of the end to be obtained is an important factor.

C H A P T E R III

A BRIEF REVIEW OF THE PRESENT PROBLEM

CHAPTER III.

A BRIEF REVIEW OF THE PRESENT PROBLEM. THE WORK OF DOWNEY AND OF THE PSYCHOLOGICAL LABORATORY OF THE UNIVERSITY OF ILLINOIS.

Although there exists a high correlation between intelligence and such traits as power to give sustained attention, persistence, and initiative, Terman (73) finds that unusual application or persistence often compensates for a low level of intelligence.

Downey of the University of Wyoming, in order to supplement intelligence ratings by some measure which will indicate the traits Terman mentions, has devised a scale for measuring the will pattern. In the introduction to "The Will Profile" (19) Downey says: "In practical work with the intelligence scales one is constantly impressed by the need of supplementing them by some form of character-rating. Quite possibly, as has been stated by Thorndike and others, there exists a high correlation between character and intelligence, yet in the narrow range within which one works in, say, a college community, the achievement which one may expect from a student of average or superior intelligence, is determined largely by such traits as persistence, energy, aggressiveness, and self-confidence. All teachers have at times seen the hard-working student of good though not brilliant intelligence outstrip another more facile in comprehension, but less assiduous in effort, a statement not meant, of course, as an assertion of any general incompatibility between quick and brilliant intelligence and capacity for prolonged study nor of any necessary connection

between slowness and industry. All forms of combination exist and it is just such patterns one needs to have outlined for aid in educational as well as vocational guidance..... Probably, however, no one would question the value of tests of the volitional pattern; the point of uncertainty is the location of such tests. The testing of a variety of functions without too penetrating analysis of what they are functions of has led to such valuable results in the way of at least crude indexing of intelligence that it encourages an attempt to plunge in medias res with respect to character classification also".

Since will-functions depend largely upon action, Downey chooses the motor activity of handwriting. This is in accordance with previously expressed views as to the importance of handwriting as a basis for character diagnosis. In a book on "The Graphology and Psychology of Handwriting" (20) she measures such qualities as feeling of self worth, originality of mind and temperament by an analysis of handwriting. It is natural, then, for a test of the will-pattern to be based on handwriting. Types--speeded, retarded, blocked, and automatic--of modifications of handwriting are included in the completed test. The original scale was based upon some 200 records and the revised edition upon an additional 100. It is devised for individual administration only. Scoring is determined by timing and by quality of writing. In the revised scale the following elements of the volitional pattern are measured:

Speed of Movement

Time taken in writing the phrase "United States

of America"

Freedom from Inertia (or load)

Normal time of writing divided by speeded time of writing

Flexibility

Disguised handwriting and imitation of handwriting copy

Speed of Decision

Time taken in checking a list of character traits

Motor Impulsion

Quality and time of writing under distraction. Distraction by means of counting, tapping, and combinations of counting and tapping while the eyes of the observer were closed are here introduced.

Assurance

This is a very cleverly devised means of securing the observer's reaction to contradiction. The directions given are as follows:

III. "Here are two envelopes containing instructions for two different mental tests. One test is very easy, the other is hard. You may choose which envelope you will open". (After giving instructions, hold the two envelopes labeled in heavy print M and N in front of reagent, N always to the right. Notice as unobtrusively as possible the time taken for choice and also any comments. As soon as the reagent has made his choice, say, "We'll open the envelope a little later". Lay the envelopes aside and record on a slip the letter on the envelope that the subject did not choose. Do not permit subject to see which letter you write down.)

Name Education Age

Address Occupation

WILL-PROFILE. SCORE:

Devised by June E. Downey

10
9
8
7
6
5
4
3
2
1
0

Revision, I (rechecked) 7.

Perseverance, VI-2

Coordination of Impulses, IV

Care for Detail, VII

Motor Inhibition, V-4

Resistance, X

Assurance, III-IX

Motor Impulsion, VIII

Speed of Decision, I

Flexibility, VI; VII

Freedom from Inertia, II 1-2; V 1-3

Speed of Movement, V-1

Date: Examiner:

I. Check the one trait in each pair which you possess:

Careful?	Careless?	Good Memory?	Forgetful?
Cautious?	Reckless?	Self-Confident?	Self-Distrustful?
Ambitious?	Unambitious?	Impulsive?	Deliberate?
Punctual?	Tardy?	Orderly?	Disorderly?
Accurate?	Inaccurate?	Cheerful?	Gloomy?
Industrious?	Lazy?	Patient?	Impatient?
Vain?	Modest?	Quick?	Slow?
Foresighted?	Not Foresighted?	Aggressive?	Not Aggressive?
Enthusiastic?	Indifferent?	Suggestible?	Not Suggestible?
Obstinate?	Yielding?	Extravagant?	Thrifty?
Superior Intelligence?		Inferior Intelligence?	
Superior Character?		Inferior Character?	

II. Writing Name (2 trials each)

1. Normal: Time:

2. Speeded: Time:

3. Retarded: A. Time:

B. Time:

III. Choice of Envelope. Envelope chosen: Time:

IV. Please write on the line below as quickly as possible the words, "United States of America". Get it all on the line and write just as rapidly as you can. Time:

_____

V. Writing of Phrase:

1. Normal (2 trials) Time:

2. Quality Time:

3. Speeded (2 trials) Time:

4. Retarded Time:

VI. Disguised Writing:

1. Time:

2. Time:

VII. A.

United States of America

1. Imitate Model A as rapidly as you can. Time:

2. Copy Model A as exactly as you can. Time:

B.

United States of America.

3. Copy Model B as well as you can. Choose your own speed. Time:

VIII. Writing Name:

1. Eyes closed. Time:

2. Counting by 3's Time:

3. Counting by 3's, Eyes closed Time:

4. Counting by 2's, Eyes closed Time:

IX. Envelope Test: a. b.

c.

X.

Later in the test this choice is again referred to:

"IX. 'Now to return to the test in the envelope. Which one did you choose?'
(Suggestion a.) 'Are you sure? I thought it was--' (Name the other letter. Record answer verbatim and manner.)
(Suggestion b.) 'I made a record of your choice. I'll look at my record and see which it was. It was--' (Again name the letter not chosen. Record subject's answer and manner. Give plenty of time, as the final reaction may be somewhat different from the immediate one: or the subject may not say anything at all at first.)
(Suggestion c.) 'Do you think I made a mistake?' (Record answer. All suggestions should be given in as matter-of-fact way as possible. At close say, 'Never mind, we'll omit this test.')
A few subjects forget the chosen envelope and a few others notice position to right or left rather than letter. If so, contradiction of the remembered position or letter can still be made."

The scoring is on a ten percentile basis ranging from violent reaction to absolute non-resistance to the examiner's suggestions.

Resistance to opposition

The handwriting is blocked by means of a small pasteboard box, while the observer is writing with eyes closed. The amount of resistance and quality of writing are here measured.

Motor Inhibition (Tenacity)

Time of retarded writing

Care for detail (Accuracy)

Accuracy in making careful imitation of handwriting

Coordination of Impulses

Writing of a phrase in a restricted space and at speeded time

Perseverance

Time of disguised writing

Revision

Time of rechecking of character traits

The last two elements are additions to the original scale. Each of the above traits are scored on a percentage basis of 1 to 10, or a total of 120 points. The total score is found to be indicative of general will capacity and the nature of the graph or character pattern is indicative of the individual's 'will-power'. The relative height of the different parts of the graph indicate at a glance the outstanding features. Over-emphasis on various parts of the graph indicate the violently aggressive pattern, the 'hair-trigger' organization, or the slow, accurate tenacious type.

Several studies* made in the Psychological Laboratory of the University of Illinois have been based upon the Downey Will-Profile. The earlier studies consisted in experimentation with the Downey Scale and correlation of results with personal opinion and observation. Later studies dealt with modifications of the Scale in order to increase its applicability. Elliott attempted by a study of the Downey Scale to adapt it for use in a questionnaire for selecting candidates for work in the Young Men's Christian Association. He found that the results of the Downey Scale compared very closely to combined estimates of instructors as to the various qualities of the observers. He also devised substitutes for the contradiction test, which is not effective upon repetition. Another student, Polkowski,

* Unpublished studies.

in order to avoid the use of handwriting, introduced the drawing of geometric figures. The star (perhaps suggested by Whipple's mirror drawing experiment (81)) was used. The Downey Scale was left intact with the substitution of drawing for handwriting. Its original nature as an individual test was not changed.

The present study is an attempt to adapt the principles of the Downey Scale to group testing. It was necessary to modify and amplify the basic test to a considerable degree. Certain handwriting tests have been included directly from the Downey Scale, or have been modified by the introduction of tracing geometric figures at normal, speeded, and retarded times. The diamond of the Binet-Simon Scale has been used in preference to the star as presenting less difficulty in drawing. Certain important modifications in method of scoring have been made necessary by the change to a group test.

C H A P T E R IV

DERIVATION OF THE GROUP WILL-PROFILE TEST

CHAPTER IV

THE DERIVATION OF THE GROUP WILL-PROFILE TEST.

The chief concern of the present study has been to devise a group test to measure the will-pattern together with a standardized method of procedure and scoring. The test as devised may be found in Chapter VI, the examiner's manual, or method of giving the test, comprises Chapter V , and a method of scoring is suggested tentatively in Chapter VII. A revision of the Group Will-Profile based upon the results of the present experiment may be found in the Appendix. It is suggested that further experimentation with this form of the test might be profitable.

The present study was undertaken during the Summer Session of the University of Illinois in 1920. The test as devised was given to 56 observers, who may be classed as follows:

Advanced students in psychology	4
Faculty members	5
Graduate students	5
School principals	5
Students in elementary courses in psychology	
Seniors	10
Juniors	7
Sophomores	3
Freshmen	1
Library School juniors	16

The test was first administered individually to the

advanced students in psychology. Their introspections and criticisms were noted and the method altered accordingly. The other observers were given the test in groups ranging from two to eighteen. In the larger groups an assistant was stationed at the rear of the room to assist the observers if necessary and to aid the experimenter in administering the test.

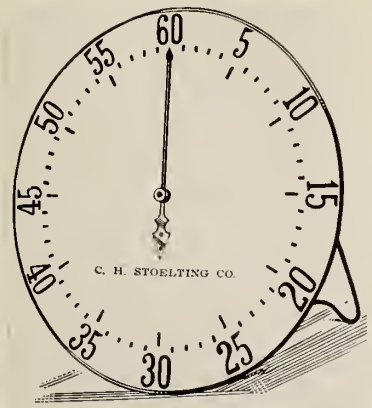
The materials needed for giving the test are as follows:

1 Mimeographed copy of the test booklet.

2 Pencils for each observer.

3 Stop-watch.

4 A timing clock as devised by Whipple for use in time experiments with reliable observers.



No. 77263

(This may be obtained from C. H. Stoelting and Company.)

5 A copy of the test and of the examiner's manual for the examiner.

6 An electric fan.

7 Three brown 3-ounce bottles, two of which contain water and the third camphor.

8 A series of 12 cards 33 x 7 cms. Heavy lines of varied length ranging from 8 to 27 cms. are drawn upon the cards in ink.

For photograph of cards see page 73; for length of lines see page 58.

9 A large gray cardboard upon which the following pictures were pasted: shoe, Victrola, bottle of grape juice, loaf of bread, alarm clock, bottle of Orange Crush, cover of Grape Nuts package, a bottle of Three-in-One Oil, picture of a man wearing a cap (taken from a cap advertisement), Camel cigarettes, and a picture of a girl holding a letter and a parasol in her hand.(taken from the cover of a recent "American Magazine"). See page 78for photograph of pictures and their arrangement.

10 A cover card for 9.

About 50 minutes are required for administering the test and 15 minutes are necessary for scoring. The method of scoring the test is described in Chapter VII.

The derivation of the test consisted mainly in a modification of the Downey Will-Profile to the requirements of group testing. Whipple's general rules for the conduct of tests (81) were carefully considered. Steven's (67) revision of the Rossolimo tests, Pressey's (56) emotional tests, and Bridges' (15) study of decision types have been helpful in suggesting additions to the original scale.

The following tabulation records the sources of the separate tests which constitute the Group Will-Profile.

Test I. Checking of traits.

Taken directly from Downey (I) with the inclusion of certain other traits. The use of the timing-clock makes the test applicable to the group.

Test II. Disguised handwriting.

From Downey (VI) with the standard phrase "University of Illinois" used instead of the name of the individual. This makes possible a more objective scoring of results.

Test III. Selection due to preference.

Suggested by the study of decision types made by Bridges (15) at Harvard in 1914. The test was first included as a possible substitute for Test I but after experimentation it was used to determine the speed of selection due to preference. The choice is made because of feelings rather than reason.

Test IV. Imitation of writing.

From Downey (VII) with the addition of rapid imitation of Model B.

Test V. Resistance of visual suggestion.

Modification of Rossolimo test No. 3 (67) and the Yerkes-Bridges Point Scale Test 11 (86).

For photograph see page 73.

Test VI. Normal tracing of diamond.

The diamond from the Binet-Simon Series used in the same manner as handwriting is used in Downey (V).

Test VII. Speeded tracing of diamond.

Suggested by Downey (V - 3).

Test VIII. Retarded tracing of diamond.

Suggested by Downey (V - 4).

Test IX. Suggestion by questions.

A form of the Aussage test described by Whipple (81). See page 78.

Test X. A repetition of Test VIII.

Test XI-A. Suggestion by slight of hand.

Rossolimo test 7. Adults usually answer this correctly. Only three observers of the 56 evidenced suggestibility by this method. The test was included for use with young observers.

Test XI-B, -C, XIII-D. Suggestion by smell.

This test cannot be used with trained observers.

Test XII-B. Coordination of impulses.

Writing "United States of America" in a restricted space and at speeded time. Downey (IV) with a modification of scoring method.

Test XIII. Changing of shape of diamond.

Downey (VI) using the diamond in place of script.

Tests XIV - 1 and 2, and XV. Originality.

The originality tests used in Bridges' (15) experiment.

Test XV. Selection of best reasons.

"Common sense" Test 3 of the United States Army Group Examination Alpha (83).

Tests XVII and XVIII. Tracing under distraction.

Modeled after Downey (VIII).

Text XIX. An attempt to measure coordination of impulses by drawing in a restricted space at speeded time.

The test failed in its purpose. The circle was too large to require effort and the time was too short to secure results. The test has been omitted in the revision of the Group Will-Profile. It might easily be modified and used for illiterates.

Test XX. Attention under distraction.

The Cancellation test for measuring attention and perception devised by Whitley and revised by Whipple (81) was used as a basis for this test. The pied geometrical symbol sheet used may be obtained from C. H. Stoelting and Company (Form No. 77261-A3).

Test XXI. Revision of Tests I and III.

From Downey (XII). The revision of Test III was not needed in the scoring and is therefore omitted in the revision of the test.

The Pressey test for emotional distractibility (56) was included in the Group Will-Profile too late to secure results worthy of attention. The test consists of two parts: the first half is a paragraph of very commonplace and stupid reading matter, with 20 irrevelevant words scattered in through the test. The subject is to read through the passage and cross out all urrelevant words. A time limit of one minute and twenty seconds is set. At the end of that time the subject turns over the page and goes through the second paragraph in the same way. The second paragraph included in the same way 20 irrelevant wairs. It is, however, a very gruesome descriptien of a medieval execution. Pressey scored the test by counting the number of extra words missed in both selections and subtracting the number of words missed in the second from those missed in the first paragraph. The idea of the test is that the emotional excitement of the second passage should cause the subject to overlook more of the irrelevant words.

The directions for administering this test and the paragraphs used are as follows:-

("On the next sheet is a short newspaper paragraph. In this paragraph there are some extra words. You are to read through the paragraph and cross out all the extra words. Work as fast as you can, as you will be given only a short time. Turn over the page. Ready, GO"

PARAGRAPH I.

This evening's the "Herald" says that the Milton property east of 3rd Street was sold this man morning to Smith and Cooper out of Chicago. It seems that is Smith has been, for some time, looking for a good poor piece of land in the business heart part

of town upon rock which he might build another boat of his chain of 10¢ stores. The local railroad firm of Whitaker and Carpenter has taken the contract. The new store will be a two block long with a front current of seventy feet on both Third and Fourth Streets. The floors from the fourth down to the eighth are being planned for offices. Already most of the air space on the fourth floor varnish has been taken. One of the firms intendin to move to this old building is the wellknown house of Steinway and Grand. We trust the firm may of Smith and Cooper may be successful in their hunting venture.

("STOP. On the next page there is another short paragraph containing some extra words. Cross out the extra words just as you did in the preceding paragraph. Work as fast as you can. Turn over the page. Ready GO.")

PARAGRAPH II.

In the past time the most horrible and terrible forms of punishing crime were far common. Taunton tells many of an execution for treason under the most cruel and revolting in conditions. The man was hanged for three minutes, then, when his struggling wi began to decrease, was cut down, stripped, and his abdomen wide slashed open. The brain entrails were then jerked out and they held up before the crowd that had gathered after to watch the execution all while the man groaned and shrieked in agony. The writer says story that his heart was next ripped out and that it continued to at best thus exposed for a full hour minute. The body was then cut in four sixth pieces and the pieces dragged but by soldiers on horse-back through the country houses along the four main side roads as a

warning to other few wrong doers, the horrible masses of flesh still warm and not dripping with blood.

It is intended to include the above test in future revisions of the Group Will-profile. Space will be allowed for its insertion by the omission of certain portions of the present test.

C H A P T E R V

PROCEDURE

(DIRECTIONS FOR GIVING THE TEST)

DIRECTIONS FOR GIVING THE TEST

(Examiner's Manual)

(50,83)

After seeing that each observer has a copy of the test booklet, and with one or more pencils ready for use, say: "We are going to give you this morning (afternoon) some new and interesting tests. These tests are in the booklets which are in front of you. Please do not open the booklets until you are told to."

(Be sure that each observer has his booklet face up in front of him.)

"Now notice on the cover of the booklet, where it says 'Write your name here'. Please write your name on the line left for it."

(Pause)

"Then fill in the date. Today is August 3 (giving correct date) Then in the next blank fill in the class to which you belong in school."

(Pause)

"Then answer the next questions. Have you ever taken the Army Alpha examinations? Write 'Yes' or 'No' in the blank allowed. Then if you have answered 'Yes' place your score in the next blank. If you do not remember, leave the line blank."

"Now give me your attention while I explain about the timing-clock. This is simply a large clock dial and counts the seconds instead of minutes. In the small circle the minutes are shown. We are going to use this clock in this test.

When I say 'GO' and you begin work, I shall start the clock. When you finish, look at the clock and write the time in the space allowed for it on your paper."

(Show how the clock is operated.)

"Now we shall start the clock and read the directions on the first page so that you may see how the experiment is to be conducted. When I say 'GO' we will begin reading the directions together. When we finish we will record the time it took us to read them."

"Attention, pencils up."

(Start clock and begin reading the directions in concert.)

"Ready, GO."

1 "Attention always means "pencils up".

2 Keep your pencils up until the examiner says "GO".

3 Listen closely to the directions for each test. Part of the test is to see if you can follow directions.

4 Do not ask any questions.

5 Do not look in the direction of any other paper.

6 Keep your eyes on your own work.

7 Do not turn the booklet over or turn any page until you are told to do so. STOP.

(Note the time, which is _____ minutes and _____ seconds and record it on the lower corner of the page.)

"Now do you understand all about the use of the time-clock?"

(Allow time for any questions.)

"Now give me your attention while I read the directions once more."

(Re-read the above directions.)

"Now turn over the page to page 1. Thus (showing). Be sure that it says page 1 in the upper corner. Attention, pencils up. Notice the directions at the top of the page. The directions say: 'In each of the following pairs of traits check the one of each pair that you possess. Make check in the parenthesis in front of the trait you possess. When you finish, notice the time clock and record the time it takes you to finish. Wait for the signal. Ready, GO."

(Do not allow more than five minutes. When all have finished, however, if the five minute period is not up, say)

"STOP. Turn over the page to page two. See that it says "2" at the top of the page. Notice the directions at the top of the page. Attention, pencils up. Write on the first line in your best handwriting the phrase 'University of Illinois'. We will use the timing clock as before. When you finish, record your time in the blank provided. Do nothing with the other lines until I tell you to. Wait for the signal before beginning. Ready,GO".

(Start the clock. Allow not over five minutes. Say "STOP" when all have finished.)

"Now, on line 2 I want you to change your handwriting of the phrase 'University of Illinois' just as much as you can by changing either the slant or the size of the letters.

Do not hurry. Record your time as before. Change it as much as you can by changing the slant or the size of the letters. Ready, GO."

(Allow not over five minutes. Call "STOP" when all have finished.)

"Attention, pencils up. Now look at line 3. I am going to ask you to attempt to disguise your handwriting of the phrase so that an expert would be unable to identify it as your handwriting. You will be given three trials before the final one. Time each one as we have been doing. Only the writing in the final one is graded. Ready, on line 3, GO."

(Pause) (Start clock.)

"Now on the next line. Ready, GO."

(Pause) (Start clock.)

"Now on the third line. Ready, GO."

(Pause)

"Attention. Look at line 4. This is your final attempt at disguising your handwriting. Remember to change it so that an expert would be unable to identify it. Ready, GO."

(Allow not over five minutes. When all have finished)

"STOP. Now notice to see if you have recorded the time in all cases on the page. On the next page you will find (Please do not turn over until the signal is given) a series of words. In each case you are to underline the one which you prefer. In case you prefer neither, select the one which you consider the most important. Ready, turn over the page to test 3.

Attention, pencils up. We will use the timing-clock again for this test. The directions say 'Draw a line under the thing in each line that you prefer. When you finish, record your time.' Ready, GO."

(Allow not over five minutes. Call "STOP" when all have finished.)

"Be sure that you have recorded your time in the lower right hand corner of the page. Now turn the page to page 4. Attention, pencils up. This is a test of your ability to copy or imitate handwriting. Notice Model A. On the line numbered 1. I want you to imitate Model A as RAPIDLY as you can. Ready, GO."

(Allow 30 seconds.) (Do not use the large timing-clock but a stop watch.)

"STOP. Attention. Now on line 2. imitate Model A as EXACTLY as you can, taking all the time you need. Ready, GO."

(Allow one minute.)

"STOP. Attention. Do not be alarmed if you did not finish, as many people do not, nor are they expected to finish in all cases. Now look at Model B. On line 3. copy Model B as well as you can. Choose your own speed. Ready, GO."

(Allow one minute.)

"STOP. Attention. Now on line 4. copy Model B as RAPIDLY as you can. Ready, GO."

(Allow 30 seconds.)

"STOP. Attention. Now on line 5. write in your own handwriting at your normal speed of writing the words "United

States of America". Bring your pencils up when you finish. Ready, GO."

(Allow all to finish. When all have finished)

"STOP. Turn over the page to page 5."

(The examiner has a series of cards 63 x 7 6m. with lines drawn as follows: Over the right hand one in each case is the number indicated. The lines are approximately 2 mm. thick.

1	10 Cm.	12 Cm.
2	12 Cm.	14 Cm.
3	14 Cm.	16 Cm.
4	16 Cm.	18 Cm.
5	18 Cm.	20 Cm.
6	20 Cm.	22 Cm.
7	22 Cm.	22 Cm.
8	22 Cm.	22 Cm.
9	22 Cm.	22 Cm.
10	23 Cm.	23 Cm.
11	22 Cm.	27 Cm.
12	27 Cm.	25 Cm.

See page for photograph of cards used.)

"Notice the directions at the top of the page. 'You will be shown a series of cards, each of which contains two lines. You are to note the relation of the line on your right to the other line and record your decision below. Make a check mark after the term which applies in each case. The right hand line will always be numbered. Attention."

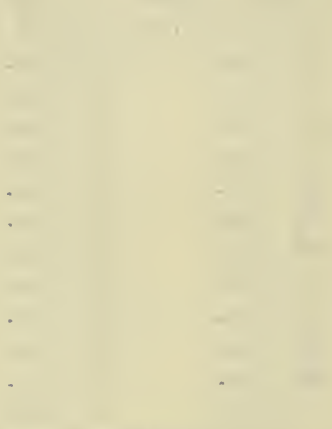
(Card 1. is displayed for six seconds.)

"Look closely. Is this line (pointing to the longer) longer than the other? Record your answer by the check mark. GO."

(Card 2. is displayed.)

"Is this line longer than the other? Record your answer under 2."

(The same procedure until card 6. when "And this?" is all that is said in pointing to the numbered



line. After No. 12)

"STOP. Turn over the page to page 6 and bring your pencils up. Notice the directions at the top of the page. 'Trace as many of the diamonds as you can in the time allowed. Now, in the tracing you are to trace the diamonds beginning at the left and going around in a clockwise direction. Thus."

(Show on the blackboard or on an enlarged diamond what is meant by clockwise.)

"Do not begin until I tell you to. (Holding up page 6.) You are first to trace the diamond in the upper left hand corner (pointing) and then proceed across the page from left to right, and then down to the next row and so on until you finish. Now trace these diamonds at an easy and normal rate of speed. DO NOT HURRY and DO NOT SLOW DOWN. Ready, GO."

(Allow one minute.)

"STOP. Turn over the page to page 7 and bring your pencils up. Notice the directions at the top of the page. Keep your pencils up until I say 'GO'. You are to trace these diamonds as RAPIDLY as you can. Ready, GO."

(Allow 15 seconds.)

"STOP. Bring your pencils up. Turn over the page to page 8. Now these diamonds are to be traced as SLOWLY as you can and yet keep your pencil moving. Some people take as long as five minutes to trace one. Be sure to keep your hand moving. Ready, GO."

(A supply of blank pages should be ready for use in case anyone misunderstands and draws so rapidly as

to complete the page before time is called. Allow three minutes.)

(At end of 30 seconds say "Be sure to keep your pencil moving". Repeat at end of one minute; one minute 30 seconds; two minutes. At end of three minutes)

"STOP. Please lay down your pencils and fold your arms! Give me your attention for a moment. I am going to show you for a brief time a card upon which are pasted a number of pictures of various sorts. I want you to notice very carefully as I shall ask you what you see. (See page 78.)

(Exhibit the card for ten seconds. Then cover it with another cardboard.)

"Take up your pencils again and turn over the page to page 9. On page 9 you will find a series of questions about the objects on the cardboard. I shall read the questions, allowing you time to record your answers."

(Read the following, allowing time for the blanks to be filled.)

"Write your answers to the following questions in the blank after each question. Now notice the questions."

1 Did the boy in the upper right hand corner have a hat or a cap on his head? _____

2 What kind of cigarettes did you see? _____

3 Was there a bottle of three-in-one oil in the picture? _____

4 Were there three or four bottles of something good to drink in the picture? _____

5 Which of the three good things to eat were in the picture? Bread, cake, doughnuts?_____

6 Remember the picture of the girl in the center of the picture. Did she have a book or a glove in her hand? _____

7 What kind of breakfast food was advertised in the picture - Grapenuts or Shredded Wheat?_____

8 Have you answered the above questions to the best of your ability? _____

"Now on the next page you will find another set of diamonds. These are to be traced as slowly as you can but yet you must keep your hand moving. Turn over the page to page 10. Attention. Trade these as SLOWLY as you can and yet keep your pencil moving. Ready, GO."

(Allow three minutes. At end of each 30 seconds, remark: "Be sure to keep your pencil moving. At end of three minutes)

"STOP. Turn over to page 11."

(Examiner must be familiar with this procedure before attempting this test. Practice until it becomes automatic.)

"I am going to repeat some names. You are to tell how many I say."

(Repeat rapidly "John, Mary, Susan, Kate", counting them on FIVE fingers to suggest five as the number of names given.)

"Now on the line numbered A. cross off the number of names that

I mentioned. Be careful not to be influenced by your neighbor's decision. Now we shall have to use the clock again. I am going to test your sense of smell. I have here some bottles containing various things, perfume, camphor, ammonia and so on. I shall open each of these bottles in the draft of the electric fan. You are to watch the clock and check the second in B. on page 10 when you first perceive the scent from the bottle. The odor will be either pleasand or unpleasant. If you recognize the odor, record it in the blank left for such purposes. If it is not familiar, record it as 'pleasant' or 'unpleasant'."

(Shake bottle, holding it in front of fan. Start fan, start clock and open the bottle.)

"Record this under B."

(Allow two minutes.)

"If you have not detected it now you are slower in some ways than the rest of us. (wrinkling the nose as you smell the bottle) Now try again. This is sample C."

(Start clock as before.)

"Record your time when you first detect the odor."

(At end of two minutes)

"Please record the odor if you recognize it. If not, state whether it is 'pleasant' or 'unpleasant'."

(Close bottle.)

"Now turn over to page 12. This is a third smell test. Please record the time when you smell this."

(Proceed as before only with real scent this time.)

Bottles B and C contain water only, Bottle for test 12 contains camphor or perfume.

"Record the time as before. At the bottom of the numbers name the odor. If it is not familiar state whether it is pleasant or unpleasant."

(Allow one minute.)

"Attention, pencils up. Now notice the line drawn across the center of the page. Notice the directions. 'Please write on the line below as quickly as possible the words "United States of America". Get it all on the line and write just as rapidly as you can. On the first line. Ready, GO."

(Allow 15 seconds.)

"STOP. Now try again on the second line. Ready, GO."

(Allow 15 seconds.)

"STOP. Now turn over the page to page 13. Notice the directions. Pencils up. Copy the diamond but change it so that it will not appear in any way like the origianl. Do not change the length of the lines. Make two or more trials if you wish. Ready, GO."

(Allow two minutes.)

"STOP. Now mark the first trial 'One' and the second 'Two" and so on."

(Pause 30 seconds.)

"Turn over tha page to page 14. Attention. Look at the circle at one. When I say 'GO' (but not before) draw to the right of the circle another geometric figure as different as possible from this. Ready, GO."

(Pause 20 seconds.)

"Now look at 2. When I say 'GO', draw anything else as dif-

ferent as possible. Ready, GO."

(Pause 10 seconds)

"Try again."

(Pause 10 seconds)

"Mark your trials 1 and 2."

(Allow five seconds)

"Turn over the page to page 15. Notice the words at the top of the page. Each of them stand for something in out thought. Now, I want you to write opposite each any other concept or word which is as different as possible from these. Ready, GO. "

(Allow one minute)

"STOP. Notice the line across the center of the page. Now look at the directions for test No. 16. (Reading) 'This is a test of common sense. On the next page you will find questions like the following. Each question is followed by three answers. You are to look at the answers carefully; then make a cross before the best answer to each question as in the sample: Why do we use stoves? Because a. they look well, b. they keep us warm, c. they are black. Here the second answer is the best one and is marked with a cross. Now on the next page you are to do the same thing as has been done in the sample. Place a cross before the best answer to each question. When the signal is given to turn the page, turn it rapidly and come to attention. Ready, Turn the page to page 16. Make a cross before the best answer to each question. Ready, GO."

(Allow one minute)

" STOP. Turn over the page to page 17. Attention.

Now you are to draw as many diamonds of the standard size, like

the sample below as you can while we count aloud by threes. Everyone must count and keep together with me. Ready, GO."

(Examiner holds watch and counts: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, at the rate of one each second.

At end of 15 seconds say:)

"STOP. Turn over the page to page 18. You will do the same thing as before but with your eyes closed while we count by threes. First place your left hand on your book, in order to hold it firmly. (Showing) Next place your right hand with pencil in position to draw. Now throw your heads up and back so that I can see your faces. Close your eyes and wait for the signal. Remember to count and draw at the same time. Ready, GO"

(Count as before) (Allow 15 seconds)

"STOP. Open your eyes. Turn over the page to page 19. Attention Notice the directions. 'In the circle below draw as many small diamonds as you can in the time allowed. Draw the diamonds as small as the sample shown. Ready, GO."

(Allow 30 seconds)

"STOP. Notice the directions at the bottom of the page. 'The next test is the last one. Everyone please try to do their best. You will be required to cross out all the triangles in a page of geometric figures. These triangles will be placed in all manner of positions, but you are to cross out or draw a line through every triangle. Now turn your booklet around so that the fastened edge is away from you."

(Show method of turning)

"Turn over the page and come to attention. Ready, GO."

(While the observers are drawing, the examiner should keep up a continual talking and urging.) The proced-

" ure used was as follows:-

"Hurry up, I never saw such a slow bunch of people in my life. This is the last test and I want to get through with it as soon as you do. Hurry up a bit. Can't you go any faster. It isn't hard to cross out triangles, the only trouble is that you can't go fast enough. Please speed up a bit. Don't look at me, I want you to pay your best attention to the triangles and get them all crossed out. Pep up. We haven't all day to do this is. You seem to think that we have plenty of time. Well we haven't. Hurry up. Speed up. Just a little bit faster. Some of you are going altogether too slowly. All of you can go ten times faster than you are now going. Hit it up. Hurry. Please go a trifle faster. If this were a matter of life and death you couldn't go fast enough. Remember that you will be considered a slow-poke if you did not finish on time. You should finish before anyone else in the class is half through. Be sure to cross out every triangle, but you must work more rapidly. Hurry up."

(Allow one minute)

"STOP, Close your books.

Now I want you to check over some of the former tests. Turn over your books to the front page. I want you to check over the list of character traits on page one using the timing clock as at first. Please open your books to page one. Please draw a circle around every parenthesis which precedes a trait

you are positive you possess. Be absolutely sure as to your decision. When you finish, notice the clock and record the time in the circle in the upper right hand corner of the page. Ready, GO."

(Start clock at the same time. When all have finished)

"Now turn over to page three. Again recheck the ones you prefer by drawing a circle around the word. It is not wrong to change your previous decision but you must be sure as to your decision this time. Watch your time as before. Ready, GO."

(Start clock. When all have finished)

"STOP. Record your time in the circle in the upper right hand corner. Close your books. Pass them towards the aisles so that I may collect them."

(After all books are collected and counted)

"That is all. Thank you."

- - - - - - - - - -

C H A P T E R VI

THE GROUP WILL-PROFILE TEST

Cover page

CIRCLE TEST.

Write your name here First _____ Middle Initial Last Name

Date _____ 1920. What is your class in school?

_____

Have you ever taken the Army Alpha Intelligence Test?

_____

If so, what was your score? _____.

DIRECTIONS

1. "Attention" always means "pencils up".
2. Keep your pencils up until the examiner says "GO".
3. Listen closely to the directions for each test. Part of this test is to see if you can follow directions.
4. Do not ask any questions.
5. Do not look in the direction of any other paper.
6. Keep your eyes on your own work.
7. Do not turn the booklet over or turn any page until you are told to do so.

_____ Min. _____ Sec.

A. IN EACH OF THE FOLLOWING PAIRS OF TRAITS CHECK WITH ONE OF EACH PAIR THAT YOU POSSESS. MAKE CHECK IN THE PARENTHESIS IN FRONT OF THE TRAIT YOU POSSESS.

( ) Careful? ( ) Careless?

( ) Cautious? ( ) Reckless?

( ) Ambitious? ( ) Unambitious?

( ) Punctual? ( ) Tardy?

( ) Accurate? ( ) Inaccurate?

( ) Industrious? ( ) Lazy?

( ) Vain? ( ) Modest?

( ) Foresighted? ( ) Not Foresighted?

( ) Enthusiastic? ( ) Indifferent?

( ) Obstinate? ( ) Yielding?

( ) Superior Intelligence? ( ) Inferior Intelligence?

( ) Superior Character? ( ) Inferior Character?

( ) Good Memory? ( ) Inferior Memory?

( ) Self-confident? ( ) Forgetful? Self Distrustful?

( ) Impulsive? ( ) Deliberate?

( ) Orderly? ( ) Disorderly?

( ) Cheerful? ( ) Gloomy?

( ) Patient? ( ) Impatient?

( ) Quick? ( ) Slow?

( ) Aggressive? ( ) Not Aggressive?

( ) Suggestible? ( ) Not Suggestible?

( ) Extravagent? ( ) Thrifty?

( ) Truthful? ( ) False?

( ) Honest? ( ) Dishonest?

( ) Sincere? ( ) Deceitful?

TIME

____Min.

____Sec.

Again using the timing clock. Write on the first line in your best handwriting the following phrase: "UNIVERSITY OF ILLINOIS ". Record your time in the blank provided. Do nothing with the other lines until told to do so. Wait for the signal before beginning

1.

_ _

_ _ _ Minutes_____Seconds

2.

_ _

_ _ Min. _ _ _ _Seconds

3.

_ _

_ _ Min _ _ _ _ Seconds

_ _

_ _ Min. _ _ _Seconds.

_ _

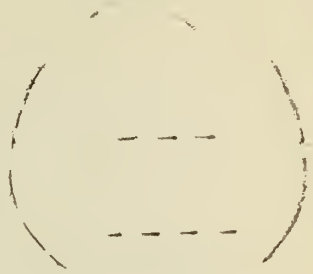
_ _ _ Min. _ _ _Seconds

4.

_ _

_ _ _Min. _ _ _Seconds

Underline the one which you prefer in each case in the series below. In case of no preference please underline the most important. Note the time when you finish.



1. violin music piano music
2. Hamlet Macbeth
3. strawberries raspberries.
4. Poe Kipling Hawthorne
5. Orange marmalade Baked Apple
6. Camphor Ammonia
7. Violet Heliotrope
8. wealth strength power
9. health riches
10. literature science philosophy
11. French Spanish German
12. Latin Greek History
13. baseball football tennis
14. basketball bowling
15. Dante Goethe Shakespeare
16. Cosmopolitan Red Book Atlantic Monthly
17. fountain pen pencil Eversharp
18. music sculpture painting drama poetry
19. peaches pears apples grapes cherries
20. Chrysanthemum lily dahlia carnation rose
21. figs dates raisins
22. Rembrandt Holbein Titian Rubens Ingres
23. bicycle automobile balloon air-plane motorcycle
24. temperance justice wisdom courage truth
25. lettuce cabbage radish olives pickles

Time:- _____ Minutes _____ Seconds

This is a test of your ability to copy or imit[illegible]

Model A.

1. Imitate Model A as rapidly as you can. Use the line below

2. Imitate Model A as exactly as you can

Model B.

United States of America.

3. Copy Model B as well as you can. Choose your own speed.

#4. Now copy Model B as rapidly as you can.

---

5. On the line below write in your own handwriting, at your normal speed of writing the words" United States of America."

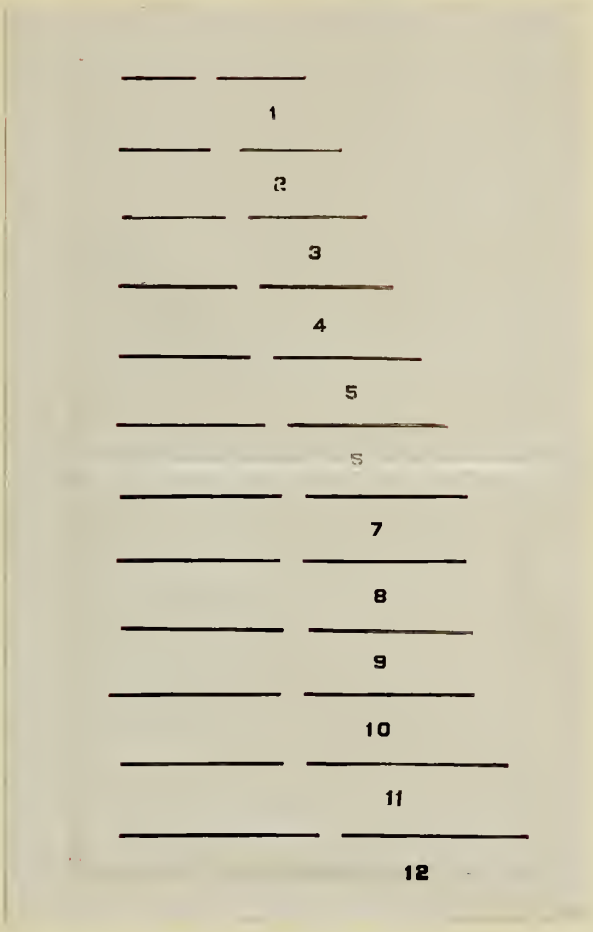


Plate showing cards used in Test 5.

Suggestion by length of lines.

5

You will be shown a series of cards each of which contains two lines. You are to note the relation of the line on your right to the other line and record your decision below. Place a check mark (✓) after the term which applies in each case. The right hand line will always be numbered.

1. Line No. 1 is longer
   shorter
   same

2. Line No. 2 is longer
   shorter
   same

3. Line No. 3 is longer
   shorter
   same

4. Line No. 4 is longer
   shorter
   same

5. Line No. 5 is longer
   shorter
   same

6. Line No. 6 is longer
   shorter
   same

7. Line No. 7 is longer
   shorter
   same

8. Line No. 8 is longer
   shorter
   same

9. Line No. 9 is longer
   shorter
   same

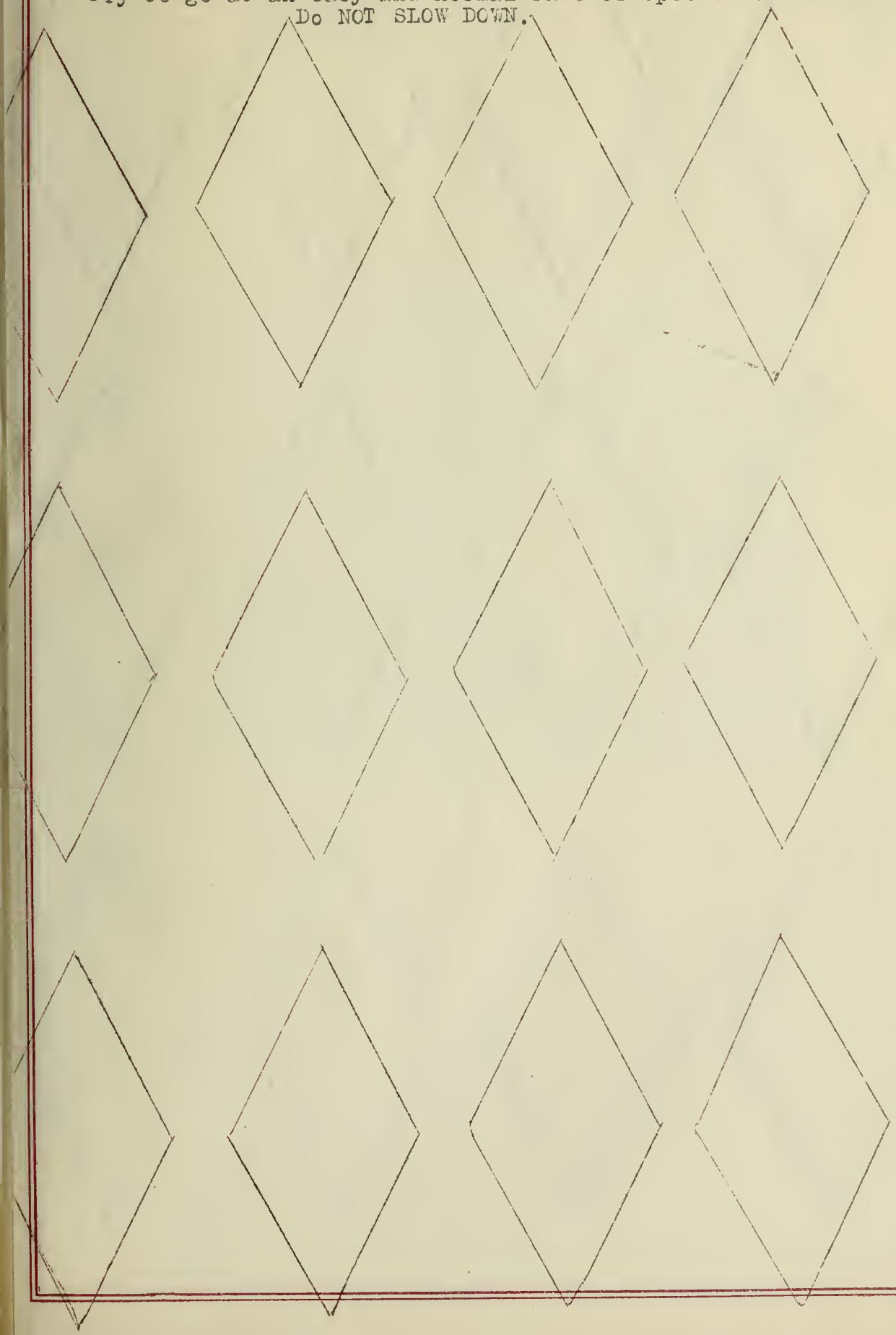
10. Line No.10 is longer
    shorter
    same

11. Line No.11 is longer
    shorter
    same

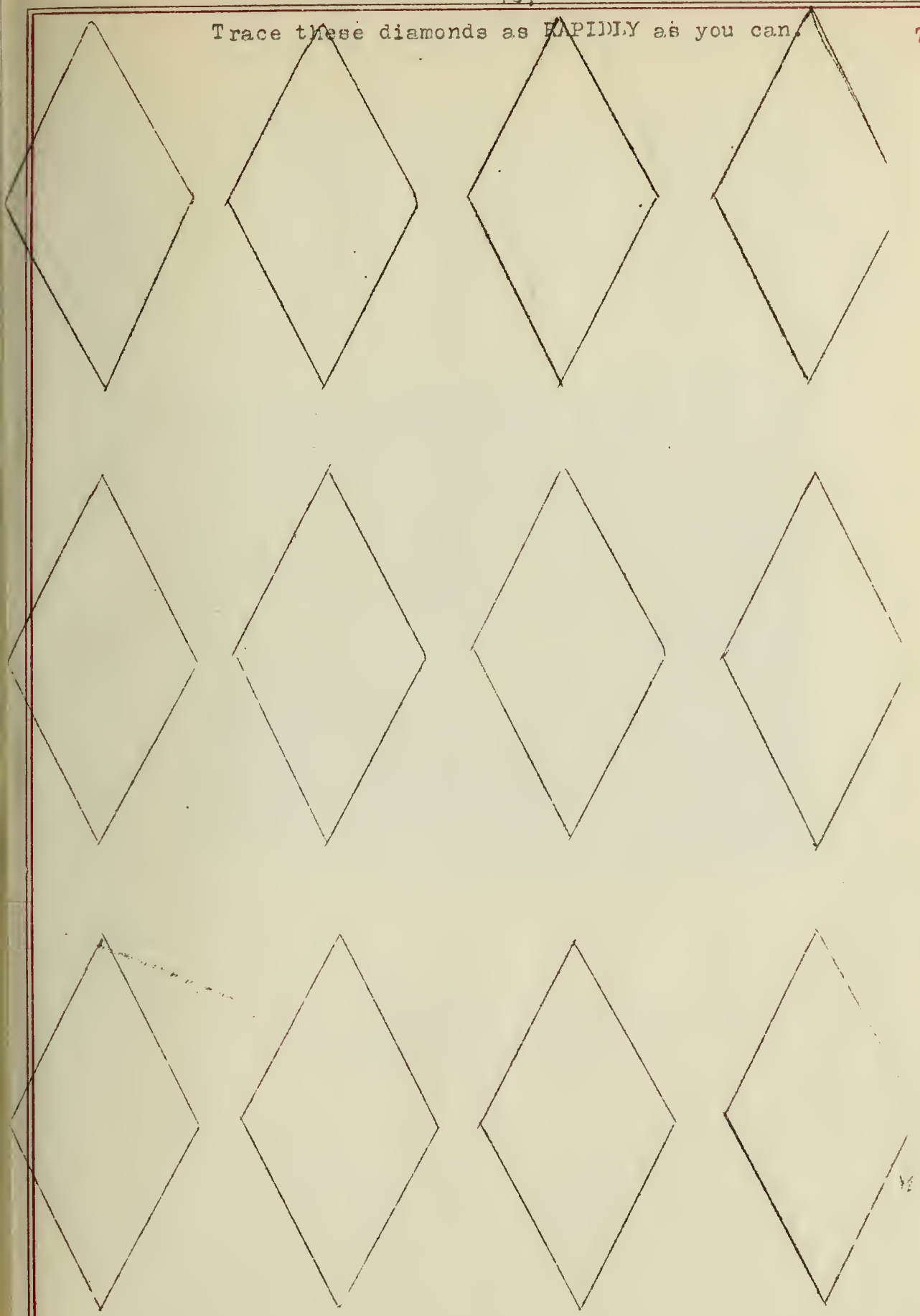
12. Line No.12 is longer
    shorter
    same

6

Trace as many of these diamonds as you can in the time allowed. Try to go at an easy and normal rate of speed. Do NOT HURRY and Do NOT SLOW DOWN.



Trace these diamonds as RAPIDLY as you can. 7



Now trace these as slowly as you can and yet keep your hand moving.

77.

8.

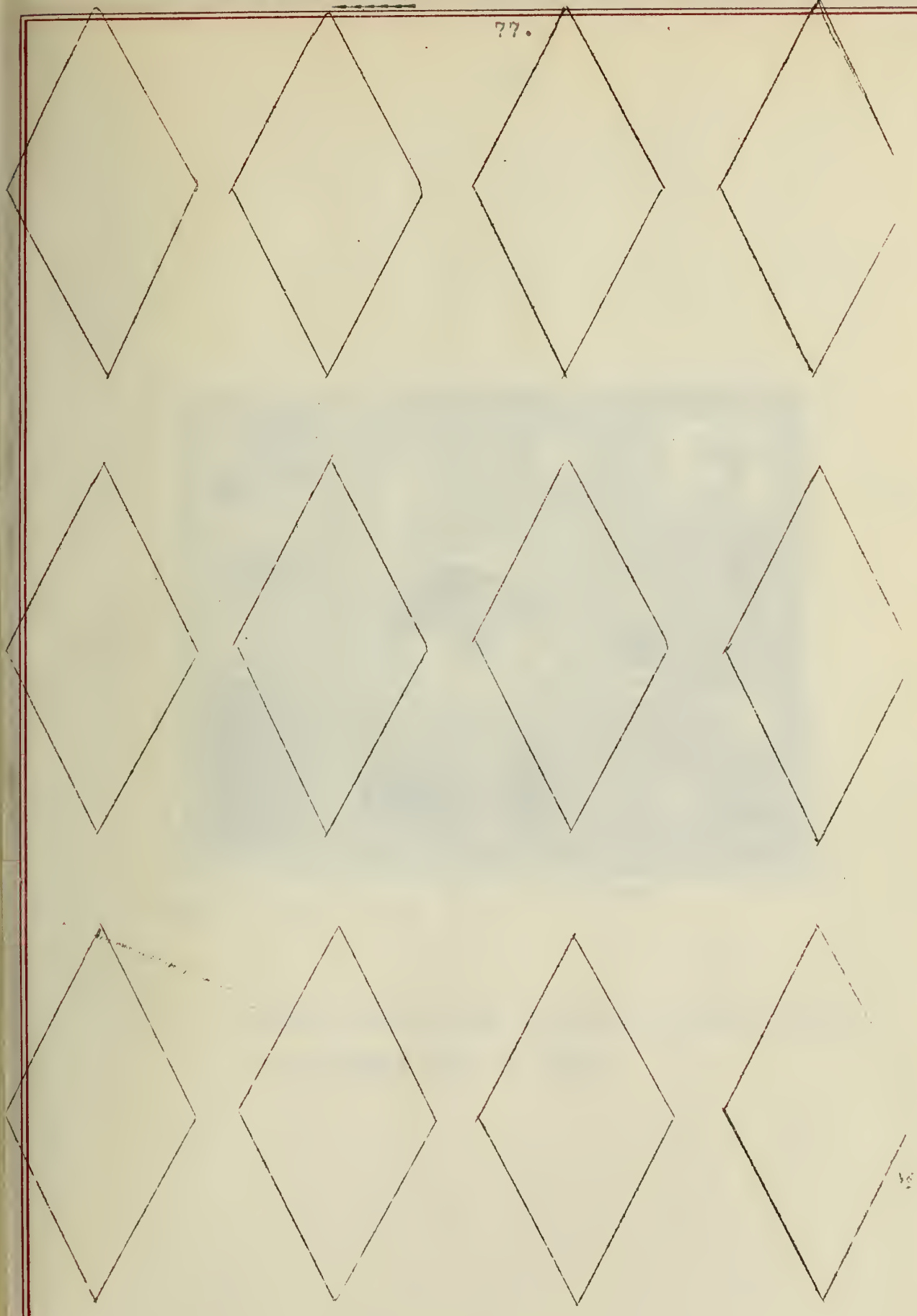


Plate illustrating card used in modification of Aussage test in Test 9.

Write your answers to the following questions in the blank after each question.

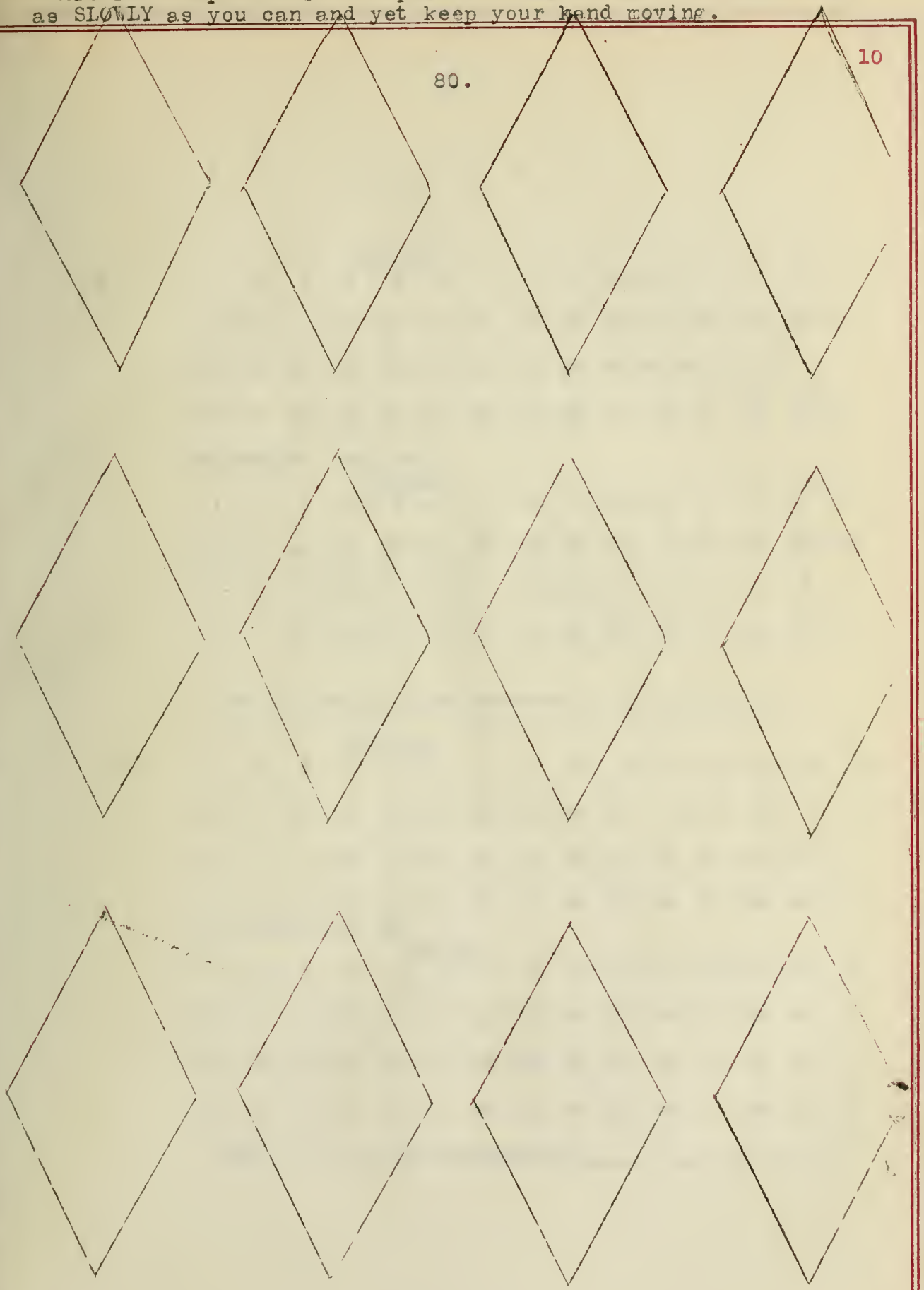
1. Did the boy in the upper right hand corner of the card have a cap or a hat on his head? _ _ _ _ _ _ _
2. What kind of cigarettes did you see? _ _ _ _ _ _ _
3. Was there a bottle of three-in-one oil in the picture? _ _ _ _ _ _ _ _
4. Were there three or four bottles of something good to drink on the card? _ _ _ _ _ _ _ _
5. Which of these three good thing to eat were there in the picture? Bread, cake, pie?_ _ _ _ _ _
6. Remember the picture of the girl in the center of the card. Did she have a book or a glove in her hand? _ _ _ _ _ _ _ _ _
7. What kind of breakfast food was advertised in the picture, Grape Nuts or Shredded Wheat?

_ _ _ _ _ _ _ _ _ _ _ _

8. Have you answered the above questions to the best of your ability? _ _ _ _ _ _

This is a repetition of a previous test. Trace each of these as SLOWLY as you can and yet keep your hand moving.

80.



81.

A. 1 2 3 4 5 6 7

B. Seconds.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

One minute and (+) Seconds

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

Name the odor that you detected _____

C. Seconds.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

One Minute (+) and Seconds

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

31 32 33 34 35 36 37 38 39 40 41 42 43 44 45

46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

Name the odor that you detected._____

D.

Seconds.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60

ONE MINUTE and Seconds

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56	57	58	59	60

B.

- -

Please write on the line below as quickly as possible the words " United States of America" Get it all on the line and write just as rapidly as you can.

_____

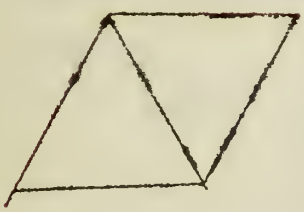
_____

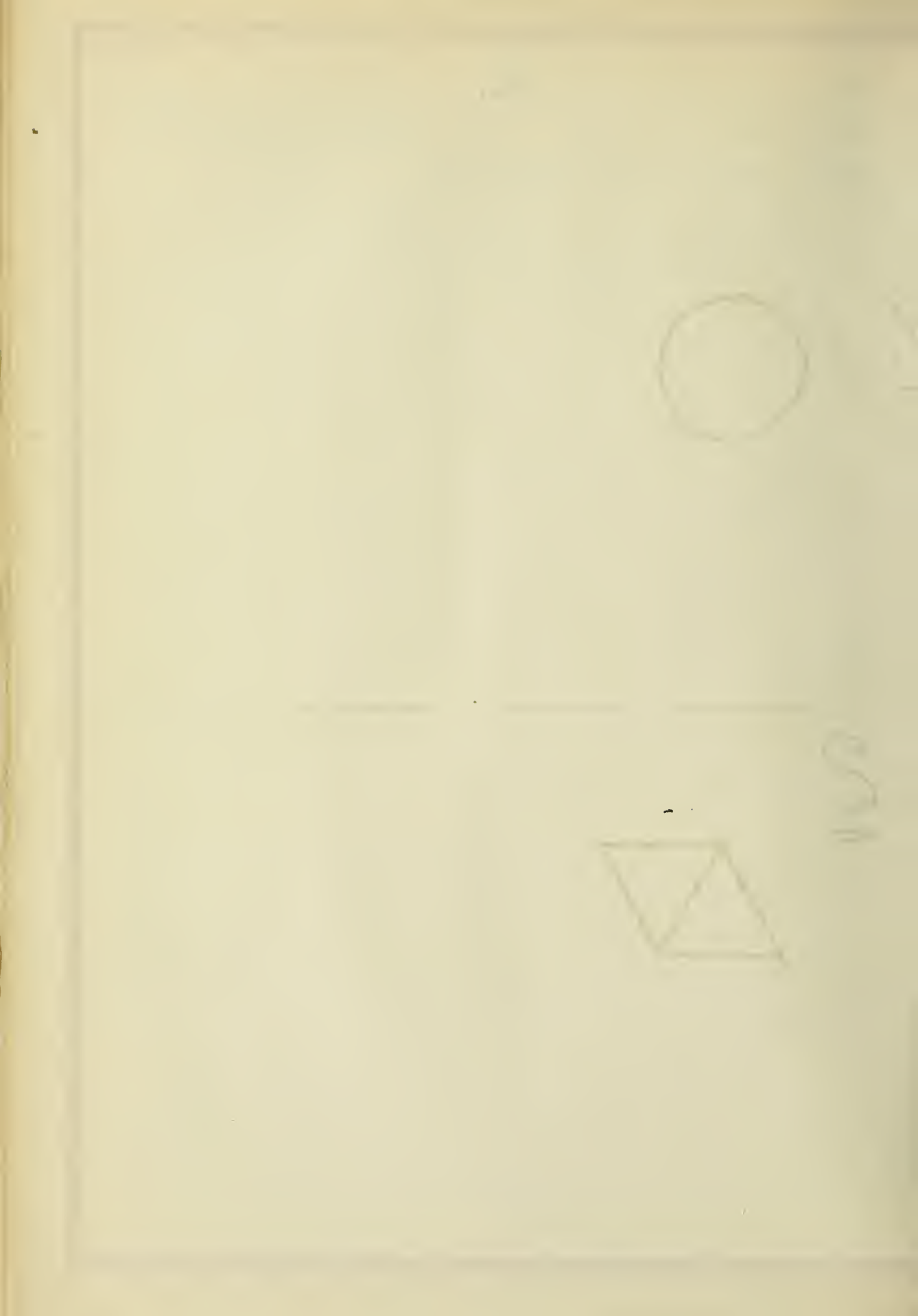
Now copy the diamond but change it so that it will not appear in any way like the original. Do not change the length of the lines. Make two trials if you wish.

84.

1.

2.





85.

BLOT

MAD

CABBAGE

SUBSTANCE

LAD

HEAVEN

CHILD

ANSWER

ANTAGONISTIC

Notice these directions for Test No. 15.

"This is a test of common sense. On the next page you will find questions like the following. Each question will be followed by three answers. You are to look at the answers carefully; then make a cross before the best answer to each question, as in the sample:

SAMPLE: Why do we use stoves? Because

a. they look well.
X. they keep us warm
c. they are black

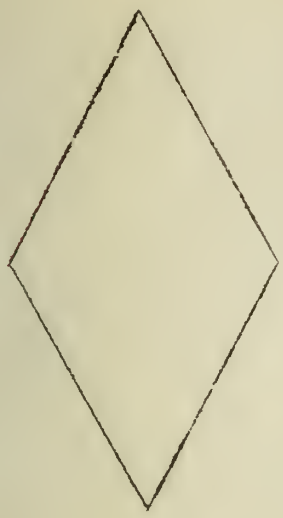
Here the second answer is the best one and is marked with a cross. Now on the next page you are to do the same thing as has been done in the sample. Place a cross before the best answer to each question. When the signal is given turn the page as rapidly as you can and come to attention.(with your pencil up)

SELECTING BEST REASONS. 16.

Make a cross before the best answer to each question.

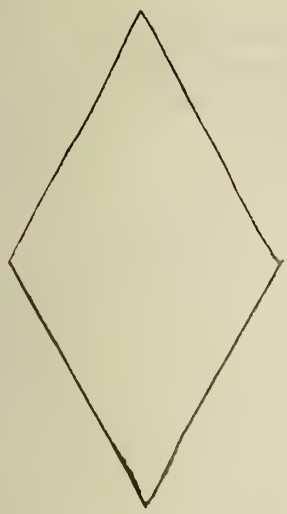
1. Cats are useful animals, because
   a. they catch mice
   b. they are gentle
   c. they are afraid of dogs.
2. Why are criminals locked up?
   a. to protect society
   b. to get even with them
   c. to make them work
3. Why is leather used for shoes? Because
   a. it is produced in all countries
   b. it wears well
   c. it is an animal product
4. Why judge a man by what he does rather than by what he says?
   a. because that a man does shows what he really is
   b. because it is wrong to tell a lie
   c. because a deaf man cannot hear what is said
5. If you were asked what you thought of a person whom you didn't know what would you say?
   a. I will go and get acquainted
   b. I think he is all right
   c. I don't know him and can't say.
6. Streets are sprinkled in summer
   a. to make it cooler
   b. to keep the automobiles from skidding
   c. to keep down dust
7. What is wheat better food than corn? Because
   a. it is more nutritious
   b. it is more expensive
   c. it can be ground finer
8. If a man who can't swim should fall into a river, he should
   a. yell for help and try to scramble out
   b. dive to the bottom and crawl out
   c. lie on his back and float
9. Why are electrical engineers highly paid?
   a. their ability is much in demand
   b. they have a college education
   c. they work long hours.
10. Cotton fibre is much used for making cloth because
   a. it grows all over the south
   b. it can be spun and woven
   c. it is a vegetable product
11. If a man had a million dollars, he ought to
   a. pay off the national debt
   b. contribute to various worthy charities
   c. give it all to some poor man
12. Why do many peoples prefer automobiles to street cars? Because
   a. an auto is made of higher grade materials
   b. an automobile is more convenient
   c. street cars are not as safe
13. The feathers on a bird's wings help him to fly because they
   a. make a wide, light surface
   b. keep the air off his body
   c. keep the wings from cooling off too fast
14. All traffic going one way keeps to the same side of the street because
   a. most people are right handed
   b. the traffic policeman insists upon it
   c. it avoids confusion and collisions

Now draw as many diamonds of the standard size (like the sample) as you can while we count aloud by threes. Everyone must count and keep together with the examiner. 17



Close your eyes and draw diamonds while we count again.

Try to draw diamonds of the standard size.

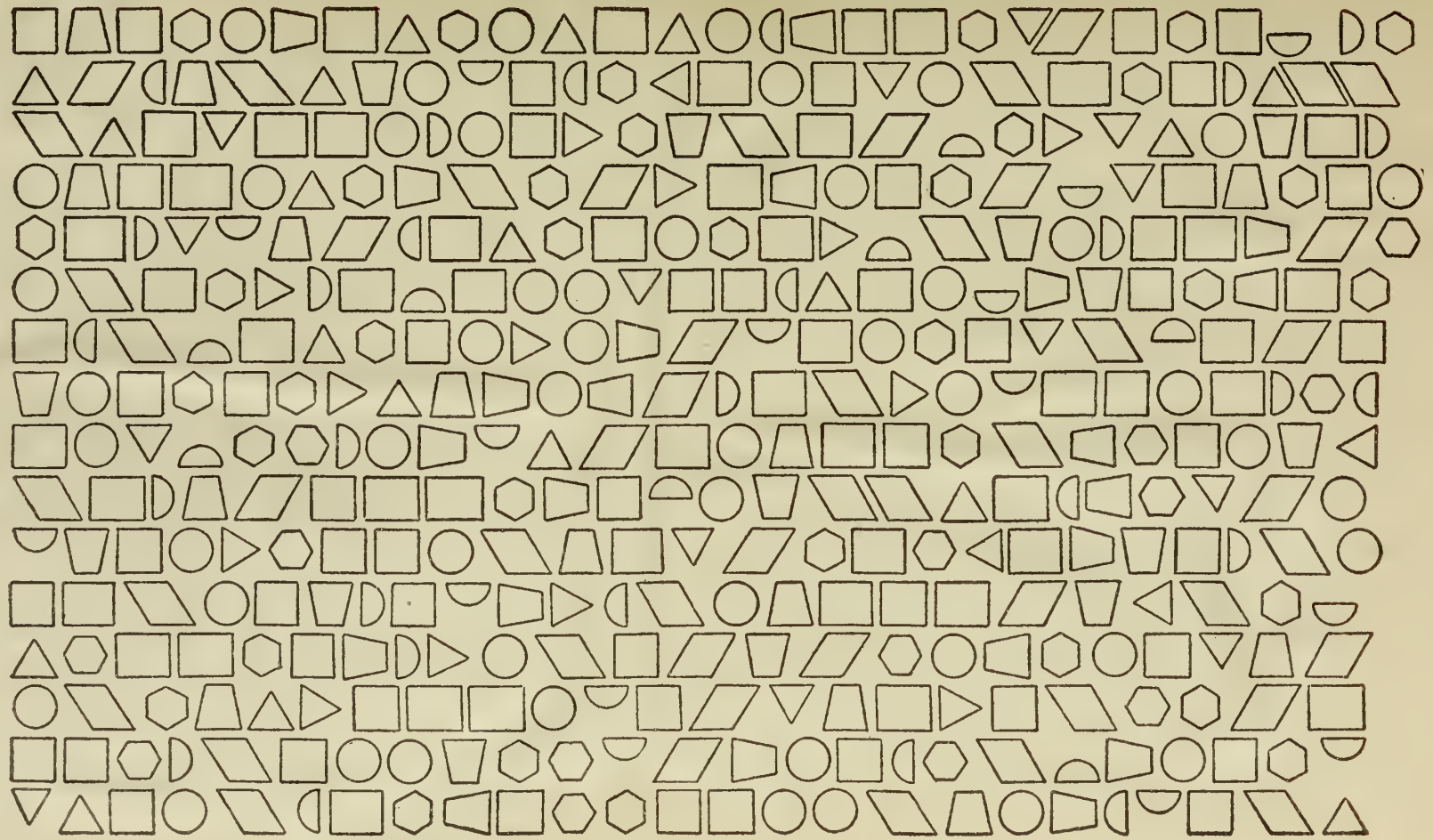


89.

In the circle below draw as many small diamonds(similar to those you have been drawing) as you can in the time allowed.

The next test is the last one. Everyone please try to do their best. You will be required to draw a line through all the triangles in a page of geomoetic figures. These triangles will be placed in all manner of positions, but you are to draw a line through every triangle.

BEGIN HERE



.06

.20

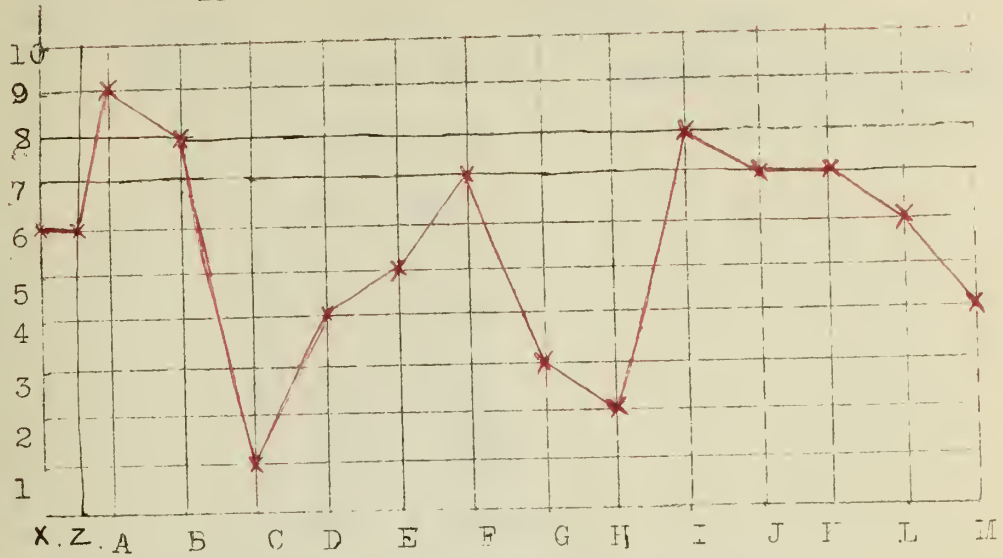
C H A P T E R VII

METHOD OF SCORING THE TEST

Reproduction of card upon which Will-Profile test results are scored.

7. Name. Observer No.7. . . Total Will Score-83
P. G.student. Army Score-B

WILL GROUP TEST PROFILE



(The above card contains a typical profile)

X. Checking of traits (I)

Z. Speed of Decision (XVI)

A. Freedom from Inertia (VI,VII)

B. Flexibility (II,IV)

C. Motor Inhibition (VIII,X)

D. Care for detail (IV)

E. Coordination of Impulses (XII)

F, Attention under distraction (XX)

G. Resistance to suggestion (V, IX, XI)

H. Originality (XIII, XIV, XV)

I. Accuracy (VI)

J. Speed of movement (VI)

K. Speed of selection (III)

L. Motor Impulsion (XVII, XVIII)

M. Revision(Assurance) (I)

C. Resistance to Emotional distraction (not used in first form of test)

TENTATIVE SCORING.
(Arranged from 56 records)

X* Checking of traits. (Downey test)

The time from test I . (First time not revision)

10. Under 50"

9. 51" -60"

8. 61" -70"

7. 71" -90"

6. 91" -110"

5. 111" - 180"

4. Over 3 minutes.

(No records over this time)

Z. Speed of Decision.

Test XVI. (From Army Scale)

The test is first scored by means of a stencil. The score is the number completed minus the number wrong plus six divided by two.

Score equals $\frac{\text{No. attempted - Wrong plus 6}}{2}$

A. Freedom from Inertia.

Test VI and VII. The number of sides of diamonds traced is here used as a basis. Each completed diamond counts 4, No credit is given for less than one-half a side.

Score is determined by dividing the number of sides completed in VI by the number of sides

* This rubric refers to the original score card (page 91). The revised score card is shown on page 102.

in VIII muliplied by 4. This is necessary because the time limit in VI was four times that of VII.

Percentage equals $\frac{\text{No of sides in VI}}{\text{No. "" in VII times four}}$

This percentage is then reduced to a score by the following table:

10..20 - .29
9. .30 - .34
8. .35 - .44
7. .45 - .54
6. .55 - .69
5. .70 - .80
4. .81 -1.00
3. Over 1.00

B. Flexibility. Modification of Downey test. Tests II and IV.

Score is made up of the sum of four elements

3 points from IV-1. Rapid imitation of Model A scored 0, 1, 2, or 3 according to Downey system.

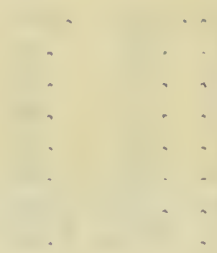
2 points from IV -4 Rapid imitation of Model B. scored 0, 1, or 2 according to degree of excellence.

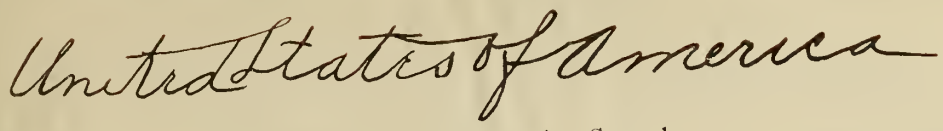
3 points from II 1-4 Score 4ine 4 for amount of change from line 1; 0, 1, 2, or 3.

2 points for time from II.

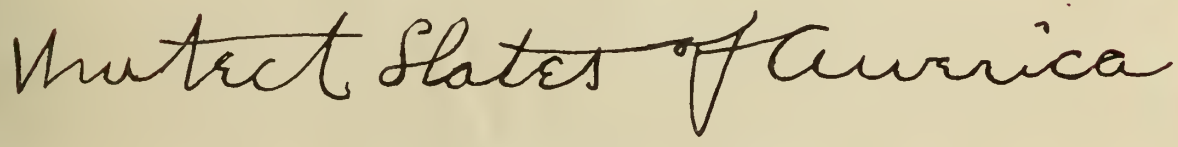
If time for line 4 is less than twice time for line 1, Score 2 ; If time is more than twice but less than three line 1, Score 1 ; If more than three times, Score 0

Add the scores from these four elements to make Flexibility score.

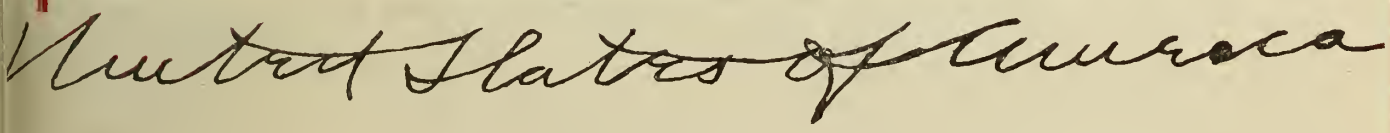




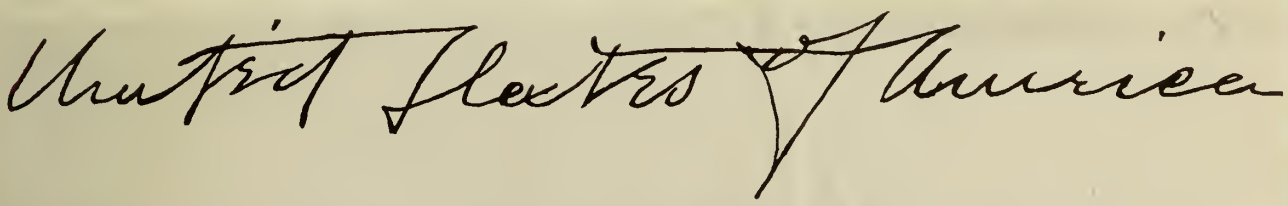
Rapid Imitation Model A. Scored 0.



Rapid Imitation Model A. Scored 1.



Rapid Imitation Model A. Scored 2.



Rapid Imitation Model A. Scored 3.

Standards for scoring Test IV -1

C. Motor Inhibition (Retarded tracing)

Number of sides of diamonds traced in tests VIII and X. The average is taken and scores apportioned as follows:

10. 1 - 4 sides
9. 5 - 6.9
8. 7 - 9.9
7.10 - 12 (inclusive)
6.13 - 15 "
5.16 - 20 "
4.21 - 30 "
3.31 - 40 "
2.41 - 45 "
1.45 - 50 "
0. Over 50.

D. Care for detail. (Downey test)

Score IV.-2 and IV -3. Careful imitations of Models A. and B. Score each 5, 4, 3, 2, 1, or 0, according to accuracy in details. Note about fifteen details in the two imitations, such, for example, as proper placing of i-dot, form of t-bar, etc,, and penalize one point for each two bad failures.
Add the scores from the two imitations for total score.

E. Coordination of Impulses(Downey test with modified scoring) Test XII.

10. Successful. Space O. K. Entire

phrase on line

9. Not more than one-half letter over.

8. Space exceeded by not more than one letter

7. Space exceeded by not more than two letters.

6. By not more than two and one-half letters.

5. By not more than five letters

4. By from five to seven letters.

3. Over seven letters.

2. More than one word left off or not on line

1. No attempt to get words on line. Writing too large

F. Attention under distraction.

Test XX. Scored by use of a stencil.

The number of omitted triangles counted, and the number of triangles not completed counted.

The number of omitted triangles is multiplied by two and added to the number not completed.

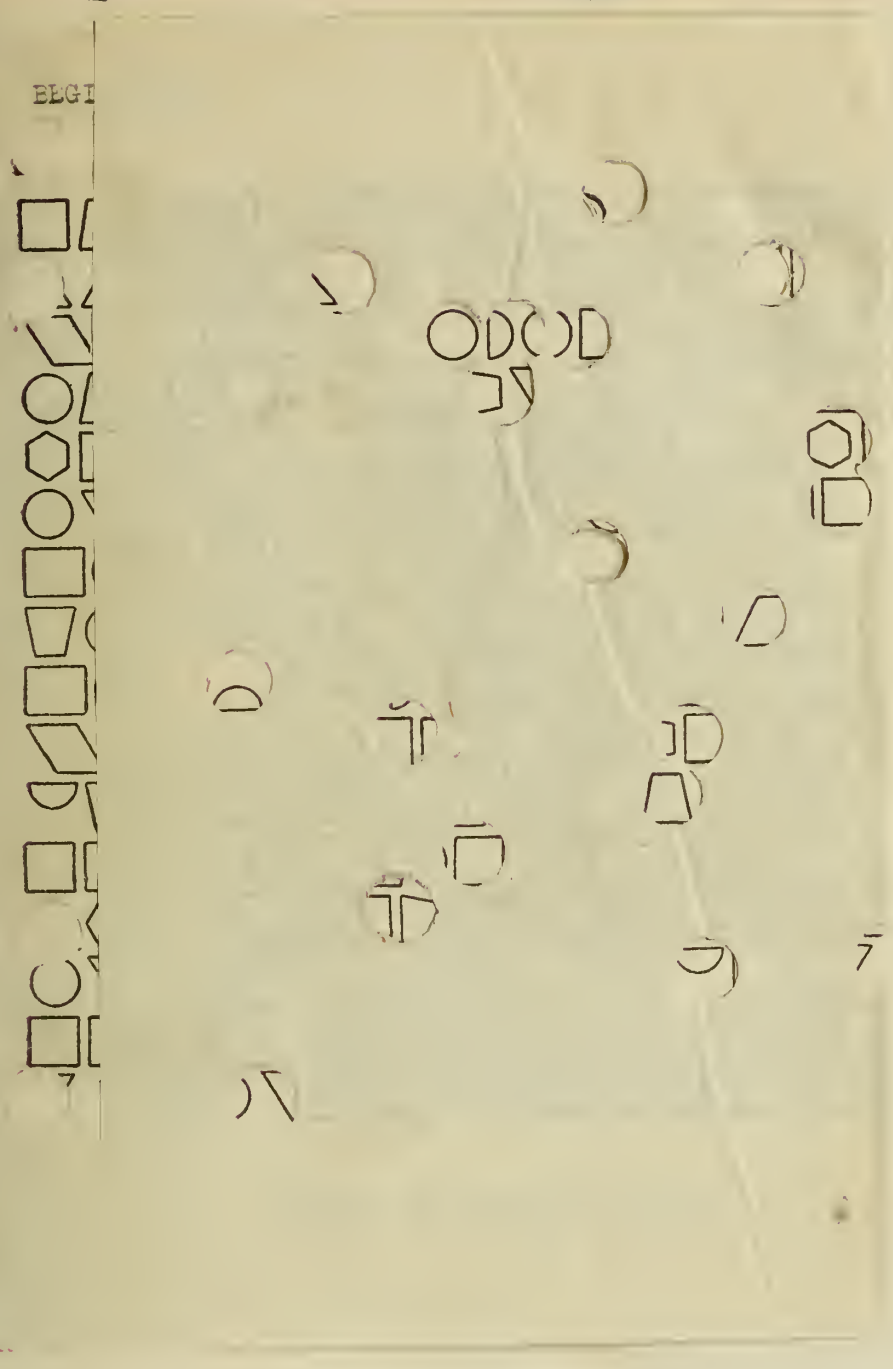
10. Five or less.
9. 6 -10
8. 11 - 15
7. 16 -20
6. 21 - 30
5. 31 - 40
4. 41 - 50
3. 51 -60
2. 61 - 80.
1. Failure to mark any.

G. Resistance to suggestion.

Tests V. IX, XI.

Deduct one for each error in V. An error is counted for questions 7, 8, 9, 10 if not marked "same" Deduct one if question 12 is not shorter.

A



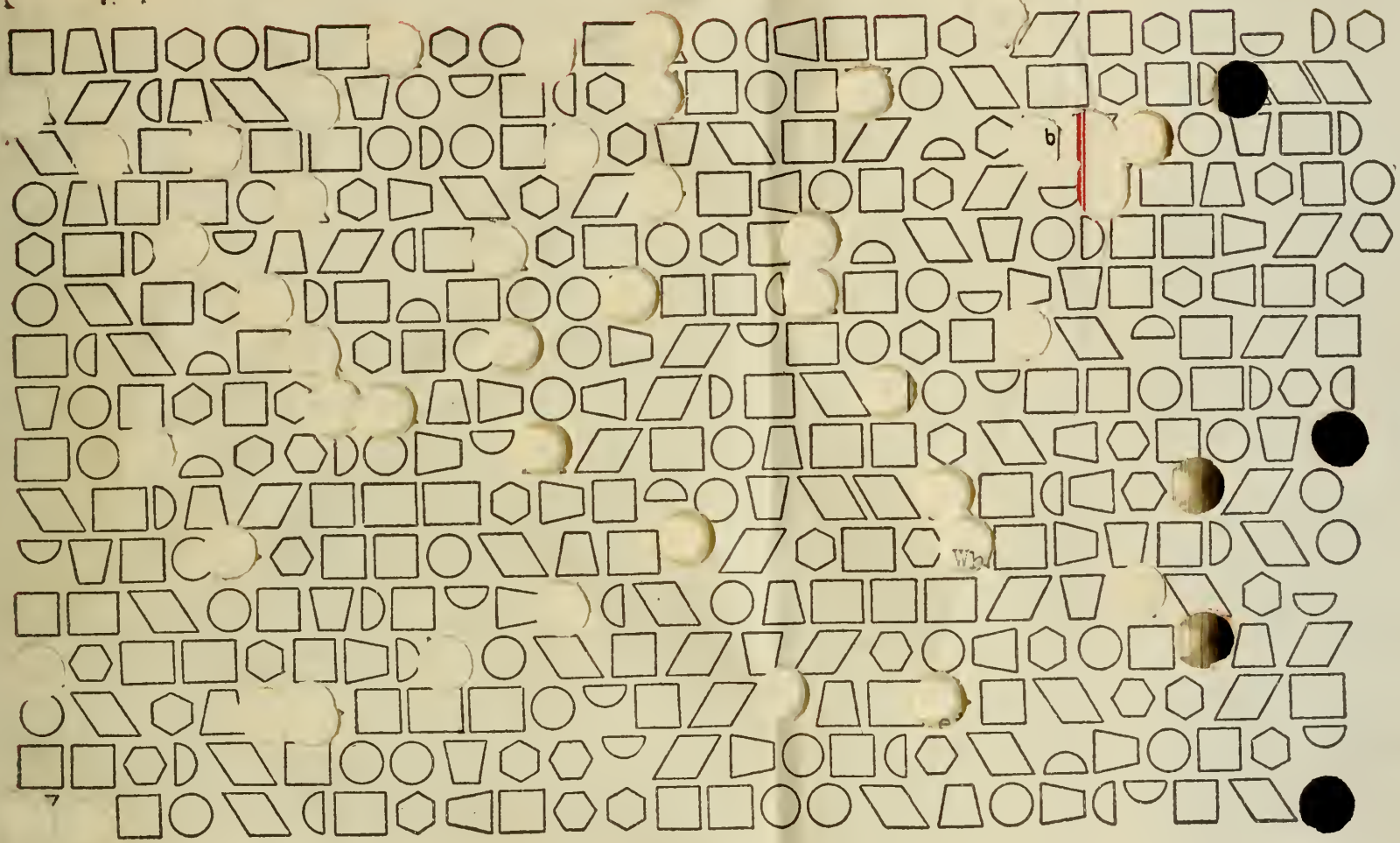
B

1 Cats
a
a
b
a
c
c
Wheat.
a
either { a / c }
a
b
b
b
a
c

A Stencil for Test 20. A similar one constructed of dark cardboard was used in scoring.

B Form of stencil used to correct Test 16.

BEGIN HERE



STENCIL FOR SCORING TEST 20.

A Stencil for Test 20. A similar one constructed of dark cardboard was used in scoring.

B Form of stencil used to correct Test 16.

b

b

a

c

Deduct one for question 4 of Test LX if not marked "two""neither" or "no"

Deduct one for question 6 of Test IX if not "letter""parasol" or "neither"

Deduct one if question A of Test XI is marked "5"

Deduct one if, in B of test XI, anything is smelled.

Deduct one if, in C of Test XI, anything is smelled.

H. Originality. (The Bridges test)

Tests XIII, XIV, XV.

Deduct 0, 1, or 2 in Test XIII if drawing is original, moderately original , or not original.

Deduct 1 in Test XIV question 1 if a square has been drawn.

Deduct 0, 2, or 3 in Test XIV question 2.

0- if a figure or picture of non-geometrical nature has been drawn

2- if a geometrical figure other than a square or circle has been drawn.

3.- if a square or circle has been drawn.

Deduct one each for responses in Test XV if the opposites for the following words are given. Black- White(If white deduct one)

Mind- Body

Cause- Effect

Heaven- Hell

Man - Woman

I. Accuracy. Test VI. (Based on same principle as recording of Whipple's Mirror Drawing Test)

The last three diamonds drawn are scored for errors. An error in a "going away" from the line When there is no attempt to keep on the line three errors to a side are allowed.

10. 1 - 4 errors
9. 5 - 8
8. 9 - 12
7. 13 - 16
6. 17 - 25
5. No scores this low (.Space allowed for expansion of scale to younger observers)

J. Speed of movement. Test VI.

Score of number of sides drawn.

10. Over 45 sides
9. 34 - 44
8. 30 - 33
7. 25 - 29
6. 20 -24
5. 16 -19
4. 13 -15
3. 10 -12
2. 7 - 9
1. Less than 7.

K. Speed of Selection. Test III.

Scores based on seconds needed to finish page the first time attempted.

10. Below 50"
9. 51" - 60"
8. 61" - 70"

7. 71" & 90"

6. 91" - 100"

5. 101" - 120" (Two minutes)

4. 120" - 130"

3. All over 130"

L. Motor Impulsion. Tests XVII and XVIII.

Allow six points for number of diamonds drawn, using the average of Tests XVII and XVIII for the scoring. Two sides of diamond counted as ½

6. Six and over

5. 4 -5

4. 3

3. 2

2. 1

1. Less than one.

Allow four points on the drawing of the diamonds in XVIII according to a scoring derived from the Yerkes-Bridges Point Scale. (See next page)

M. Revision. Test I. Number of parentheses circled minus the number of changed decisions.

10. 25.

9. 22-24

8. 20-21

7. 18-19

6. 16-17

5. 13-15

4. 9-12

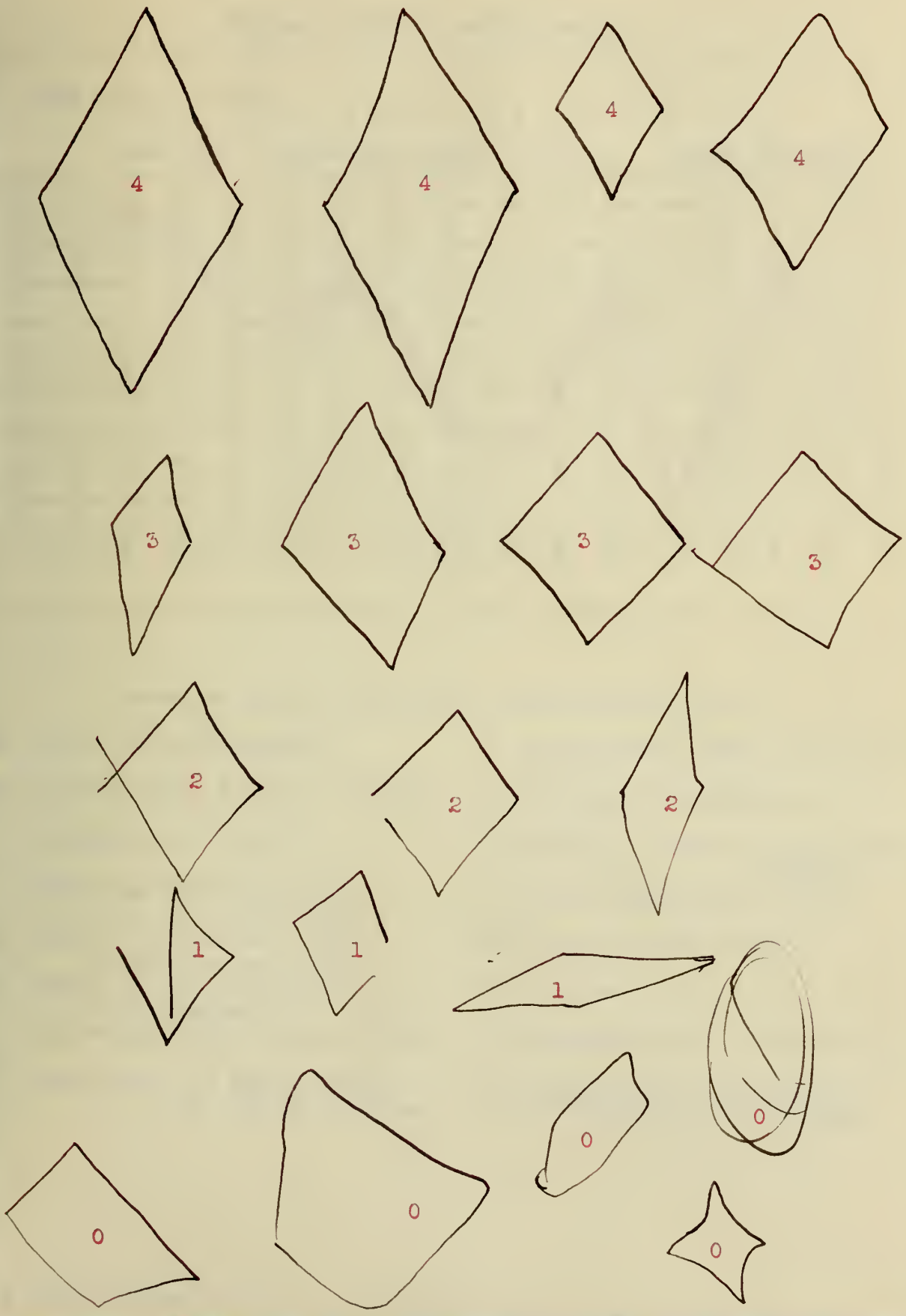
3. 7-8

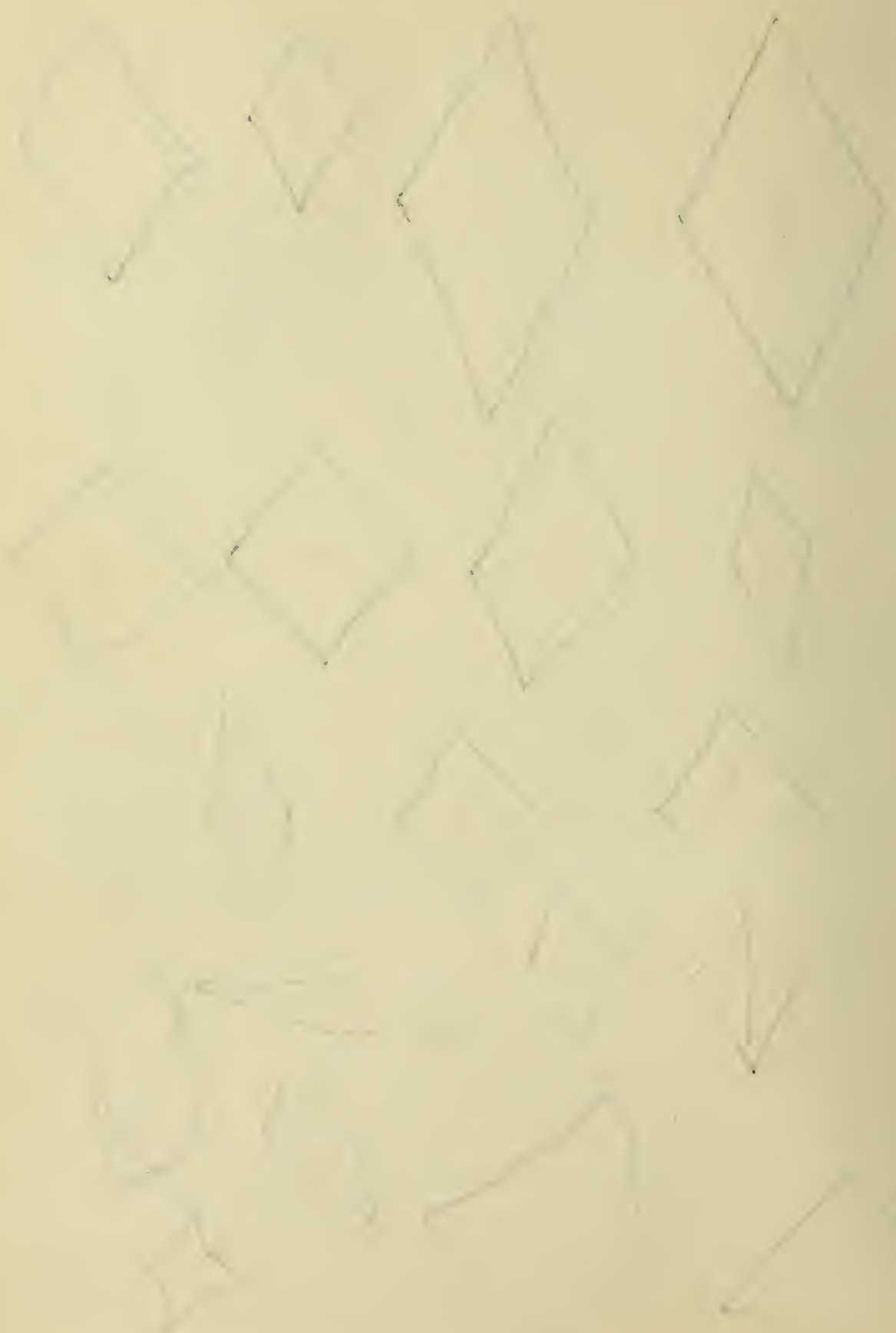
2. 5-6

1. 0-4

O. Resistance to Emotional distraction. (Taken from Pressey's Group Test for the emotions. An insufficient number of records prevents a method of scoring.

Values of diamonds for scoring test XVIII.

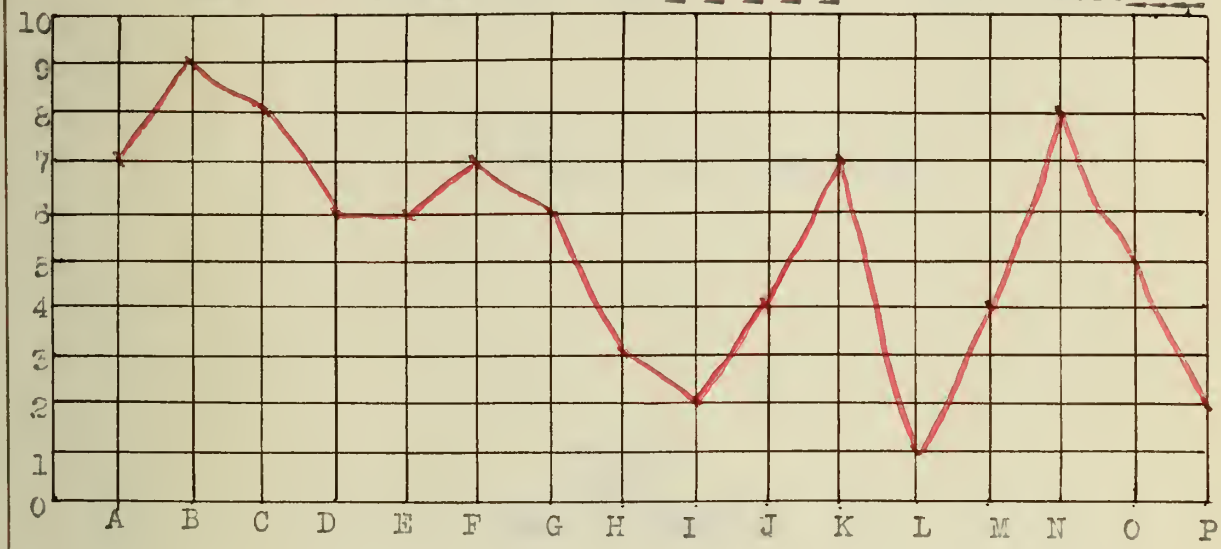




Revised form of record card.

Test No. 7 Name _____

Age 24 Scholastic rank P. G. Total Score 85



Numbers refer to Revised Group Will-Profile.#

A. Speed of movement (VI)

B. Freedom from Inertia (VI, VII)

C. Flexibility (II, IV)

D. Checking of traits (I).

E. Speed of Decision (XIV) (Common sense choice)

F. Speed of Selection (III) (Preference)

G. Motor Impulsion (XVII, XVIII)

H. Resistance to Suggestion (V, IX, X, XIII-a)

I. Originality (XI-a, XII, XIII-b)

J. Revision (Confidence) (XX)

K. Attention under distraction (XIX)

L. Motor Inhibition (VIII)

M. Care for detail (IV)

N. Accuracy (VI)

O. Coordination of Impulses (XI-b)

P. Resistance to Emotional distraction (XV, XVI)

For Revised form of Group Will-Profile see Appendix.

C H A P T E R VIII

RESULTS AND CONCLUSIONS

CHAPTER VIII

RESULTS AND CONCLUSION

The worth of any test which is designed to measure an ability depends upon its effectiveness as a measure of the ability of quality which is to be tested. Experimental evidence points to the fact that the Group Will-Profile Test, developed as a result of this investigation, is a reliable measure of the will-pattern.

One result of the experiment is the development of the method of scoring suggested in the preceding chapter (pages 91-102). The paucity of observers makes this method only tentative; 56 is too small a number upon which to base extended conclusions. With more observers it is hoped eventually to secure norms which will be of standardized value. The tests have been scored according to the method suggested and the results will be found on pages 104-105. There are fifteen elements to the test (sixteen in the revised) each of which is scored on a basis of ten. The total score is found by adding the scores of the fifteen(or sixteen) elements. Out of a possible 150 the highest total score was 131, the lowest 79, and the median 106. This is not surprisingly high when one considers that the observers were generally of a higher level of intelligence than the average population. They were entirely University students and faculty members.

Whether this total score is indicative of general will capacity is a matter for further and more thorough investigation. The lowest scores were made by observers who

CUMULATIVE DATA SHEET SHOWING SCORES MADE IN DIFFERENT PARTS OF WILL PROFILE TEST BY ALL OBSERVERS.

OBSERVER.	X	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	O	TOTAL
1	5	7	9	5	3	0	5	8	6	5	7	9	6	8	10	-	93
2	6	4	10	4	5	0	5	6	7	9	6	4	5	5	9	-	85
3	8	6	10	9	9	7	8	9	8	9	10	7	6	8	9	-	123
4	5	5	7	5	10	6	10	8	9	8	9	8	7	7	4	-	108
5	7	7	7	6	4	7	4	7	0	4	8	6	5	8	4	-	84
6	5	7	10	9	8	3	9	5	4	0	9	2	5	8	4	9	88
7	6	6	9	8	1	4	5	7	3	2	8	7	7	6	4	-	83
8	6	7	7	6	5	8	10	7	4	3	9	6	5	5	10	-	101
9	-	7	10	7	2	5	9	7	0	9	8	7	8	6	5	-	90
10	8	8	8	8	9	8	9	10	6	7	10	4	7	9	4	-	115
11	6	8	6	8	10	7	10	8	6	4	8	9	6	9	4	-	110
12	7	9	9	10	8	4	7	9	8	6	9	7	8	8	9	-	118
13	10	9	8	9	9	7	8	10	7	9	9	9	10	8	9	6	131
14	7	7	8	9	8	2	9	8	6	3	7	6	7	9	6	-	103
15	6	6	5	6	2	1	4	6	4	5	7	8	7	5	7	-	79
16	9	7	10	4	10	6	10	9	4	6	10	3	7	7	8	-	110
17	6	8	8	7	8	4	10	9	5	2	6	10	9	7	9	-	108
18	9	6	9	6	10	1	8	5	6	4	8	9	7	4	9	-	101
19	6	8	9	7	8	1	3	8	6	3	9	5	4	6	6	4	89
20	6	7	10	5	3	9	10	8	7	3	8	7	3	6	8	4	100
21	9	9	8	7	10	5	9	10	10	7	8	9	7	8	10	9	126
22	9	8	7	7	7	6	7	8	6	3	8	6	7	5	6	-	100
23	9	8	7	10	8	9	10	8	7	5	8	7	7	7	10	-	122
24	7	7	7	3	5	5	2	8	6	6	7	8	6	6	9	-	92
25	8	8	8	7	8	8	7	8	5	4	8	7	9	7	4	-	106
26	9	8	10	6	10	10	10	8	8	4	9	5	9	8	6	-	120
27	9	7	8	5	9	4	10	6	8	8	7	9	8	5	4	-	107
28	8	8	2	6	7	5	10	9	10	9	8	10	9	8	4	-	113
29	10	6	7	5	8	7	5	7	7	4	7	8	7	6	8	-	102
30	8	6	7	6	7	6	8	6	6	7	9	6	7	7	8	-	104
31	8	6	5	7	6	1	8	6	8	7	7	10	7	9	4	-	99
32	5	6	7	4	9	4	10	8	7	4	9	5	8	6	4	-	96
33	5	7	8	3	10	5	4	5	8	7	10	5	8	8	8	-	101
34	10	10	10	3	10	5	8	10	7	4	9	6	9	9	4	-	114
35	10	5	7	1	9	4	4	8	8	6	8	10	4	7	9	-	101
36	8	9	6	3	9	7	10	7	7	5	8	8	8	7	6	-	108
37	10	10	7	9	9	9	10	10	9	3	8	9	7	6	1	-	107
38	8	7	8	1	5	7	5	7	5	5	8	5	6	9	9	-	90
39	10	9	8	9	8	8	7	7	8	6	8	9	8	10	10	-	125
40	10	7	8	6	6	4	5	8	7	1	8	8	7	8	5	-	98
41	7	9	8	5	9	2	10	8	9	10	9	7	8	7	4	-	112
42	9	7	9	9	6	7	10	8	9	8	10	2	8	6	9	-	117
43	10	8	10	5	6	5	10	10	7	6	9	5	9	7	5	-	113
44	9	9	8	5	4	8	7	7	10	8	8	6	7	9	8	-	107
45	8	6	7	2	5	2	5	8	6	2	8	7	7	7	4	-	84
46	7	7	8	6	8	5	7	8	6	4	9	7	5	7	6	-	101
47	7	8	9	5	4	9	10	10	7	8	10	8	10	6	5	-	116
48	7	8	7	7	7	8	5	8	5	5	9	7	5	6	4	-	98
49	10	7	7	6	10	6	10	10	7	3	9	7	5	7	9	-	113
50	7	9	8	4	6	3	8	7	5	3	7	7	9	8	9	-	100
51	10	8	8	5	6	4	10	8	6	3	8	9	9	6	2	-	102

DATA SHEET (Continued)

OBSERVER	X	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	TOTAL
52	8	9	7	6	8	6	10	7	4	3	10	4	9	7	1	99
53	8	8	8	7	9	7	8	8	7	2	9	5	8	5	8	107
54	8	9	8	8	8	9	9	6	7	4	10	5	9	7	1	108
55	8	9	9	6	9	4	8	6	8	4	9	4	10	7	8	109
56	9	8	9	7	6	5	7	9	3	9	8	5	7	8	10	110

Median total score	106
Lowest total score	79
Highest total score	131
75%	114
25%	98

were known to be of relatively low volitional capacity. One observer, for example, was of the trusting, easily influenced type. She endeavored to obey the examiner promptly without resisting in any way. An immature naivete characterized her reaction to the test. Another observer (No. 15) with a low score (total-79) admitted that he was emotionally disturbed. He happened to take the test not long after the loss of a member of the family and could not concentrate his efforts. He was particularly unsuccessful in tracing the diamonds at a slow rate of speed. This suggests that the test might be influenced by emotional disturbances. The scores of Test XVI and XVII (Revised test) "Resistance to emotional distraction" should indicate to what extent the observer could be so influenced. It is unfortunate that these tests were included too late to secure comparable results.

The highest scores were made by aggressive, forceful observers. Observer No. 21 (score 126) is a quick, artistically inclined individual. He is emphatic in his thought and movements. His profile is lowest in freedom from inertia, care for detail, originality, and speed of affective selection, although in no instance do these traits fallibelow the upper third (from 10 to 7) of the profile. The profiles of observers No. 23 (total-122), No. 37 (total-107) and No. 39 (total-125) are characterized by a high level throughout. All three of these individuals are even tempered, yet aggressive and forceful. According to the Army scale they possess a superior quality of intelligence (187, 190, 208.)

CORRELATION OF TOTAL WILL SCORE WITH RESULTS OF ARMY ALPHA INTELLIGENCE EXAMINATIONS.

Individual.	Will Score	Army Score	Will Rank	Army Rank	Difference	D^2.
6	88	112	26	26	0	0.
7	83	110	28	29	1	1.
12	118	185	4	3	1	1.
13	131	161	1	8.5	7.5	55.25
14	103	111	15	27.5	12.5	156.25
15	79	146	29	18.	11	121.
16	110	165	8.5	6.	2.5	6.25
19	89	145	25.	23.5	1.5	2.25
20	100	145	19.5	19	.5	.25
21	126	161	2	8.5	6.5	42.25
29	102	148	16.5	16.5	0	0
37	101	187	13.	2	11	121.
38	90	134	24.	21	3	9.
39	125	208	3	1	2	4.
40	98	155	22.5	12	10.5	110.25
41	112	160	7	10.5	3.5	12.25
42	117	132	5	22	17	289.
43	113	150	6	15	9	81.
44	107	182	13	4	9	81.
45	84	115	27	27	3	9.
46	101	154	18	13	5	25.
48	98	160	22.5	10.5	12	144.
50	100	152	19.5	14	5.5	30.25
51	102	111	16.5	27.5	11	121.
52	99	164	21	7	14	196.
53	107	136	13	20	7	49.
54	108	171	11	5	6	36.
55	109	148	10	16.5	6.5	42.25
56	110	129	8.5	23.5	15	225.
				Sum D^2 =		1960.50

Coefficient of correlation by Spearman's Method of (81) Rank-Difference is according to the formula, $q = 1 - \frac{6\Sigma D^2}{n(n^2-1)} = 1 - \frac{6 \times 196015}{29 \times 840}$

= 1 - .48 or a correlation coefficient of .52

The median of the Army Alpha scores for the 29 cases used in the above table was 150, for the Will Scores- 103.

A correlation coefficient of .52 would indicate that there is some positive correlation between the two tests.

An examination of page 107 will show that a fairly high positive correlation of plus .52 exists between the Army Alpha test and the total score of the Group Will-Profile test. This is a considerable increase over the correlation of plus .15 found by Downey in a similiar number of cases.

The complexity of the character pattern with the intelligence level is remarked by Downey. The intelligence level is always a factor in estimating the worth of a particular combination of traits. The "hair-trigger" organization or the violently aggressive one, which may be exceedingly valuable if joined with high intelligence, may be very dangerous if intelligence runs low. The utilization of the will- profile in conjunction with intelligence tests proves enlightening. It indicates at once the reason why individuals rating much higher than others on the intellectual side often fail to achieve as great a success as those who excel them in motor impulsion, tenacity, or general aggressiveness. On the other hand, an individual of somewhat inferior intelligence may in some measure overcome his handicap if he be endowed with a great degree of tenacity. Downey cites cases in which an individual of high intelligence (test ratings) but with low volitional capacity is outdone by a second individual of lower intelligence but higher volitional capacity.

In an attempt to ascertain the correspondence of the Group Will-Profile test with personal estimates several instructors in the University of Illinois were asked to rate certain observers upon the traits constituting the Profile. Some difficulty was experienced due to a misunderstanding of the terms uses. A revisi

ion of the questionairre is suggested below:- (Further revision in the manner of grouping is necessary. All similiar or related factors should be grouped together. The present arrangement is in accordance with the order on the score card)

Please rate the following individuals and score them under each trait on the basis of ten. (10-highest, 0- lowest.) Do not mark anyone unless you know them.

A. Speed of movement.

Is the individual quick or slow in natural movements? Is he active or sluggish?

B. Freedom from Inertia.

Can he maintain a high speed of movement without apparent effort? Is it hard for him to get started? Is he quick or slow in "warming up" ?

C. Flexibility.

Can he change his way of thinking or acting? Is he a good imitator? Is he a good actor? Is he changeable? Would you call him versatile?

D. Speed of Decision (PERSONAL FACTOR)

Can he decide matters in which he is himself concerned rapidly or does he deliberate?

E. Speed of Choice (COMMON SENSE)

Does he quickly see the practical value of his choice? Does he use practical motives for his choice? Can he decide quickly between several alternatives from a practical point of view?

F. Speed of Decision (AFFECTIVE REACTION)

Does he decide quickly to do a thing which he prefers? If he were given several pleasant things to choose from would he choose quickly or deliberately? Is he impelled to act on the basis of likes and dislikes or by rational motives?

G. Motor Impulsion.

Does he have the ability to impel his muscles to act regardless of distraction?

H. Resistance to Suggestion.

Is he easily swayed by the opinions of others? Easily influenced?

I. Originality.

Would you consider him original in designing or invention? Does he follow the common track or does he differ from others in his thought?

J. Revision (Confidence or Assurance)

Is he confident of his own opinion? Will he change a judgment easily?

(Stubbornness is not to be considered here)

K. Attention under distraction.

Does he persistently attend an assigned task regardless of urging or distraction? Would you consider that he posesses a strong or weak power of attention? Does he mind his business?

L. Motor Inhibition.

Can he control his muscles as well for slow work as he can urge them to fast work? Can he inhibit as well as impel muscular action?

M. Care for detail.

Is the individual careful, especially in writing? Does he notice minor details? Is he careful about small things?

N. Accurate.

Would you consider him accurate in following the directions of another? Does he endeavor to do exactly as he is told to do?

O. Resistance to emotional distraction.

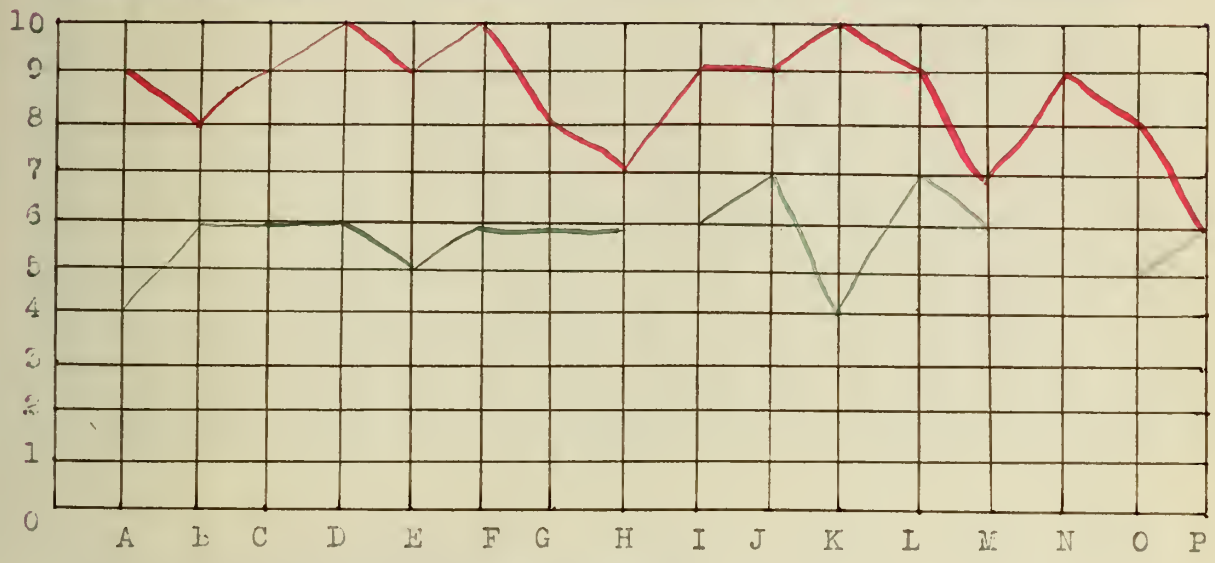
Is he easily swayed by emotions? Do gruesome details affect him?

On the following pages (pages 113-114-115) will be found profiles comparing the results of the test with personal estimates. In the case of observers 6, 13, 19, and 20, the instructor was uninformed as to the exact meaning of the terms involved. This naturally hindered his estimate of the observers. In 37 and 22 the judgments were made by individuals familiar with the test. The results here are a combination of three estimates and seem a fairer basis of comparison than the others. It will be noted that they conform rather closely to the test scores. Observers 13 and 20 have a comparatively high test score as compared with personal estimates. This is doubtless due

to knowledge of the experiment. They belong to the original group taking the test and the completed test was mainly repetition to them.

It is to be regretted that more personal estimates were not obtained for comparison with test results. In one case an observer, No. 6 (page 113) was asked to rate himself on the traits of the Will-Profile. His opinion shows a striking resemblance to the test score. The judgments passes by individuals upon themselves might be utilized to some extent in modifying, standardizing, and revising the test. Possibly the list of character traits should be revised as to be of value in this connection. This, however, does not seem feasible as many observers are influenced by self-consciousness, modesty, or desire to succeed in the test, rather than by honest opinions of themselves.

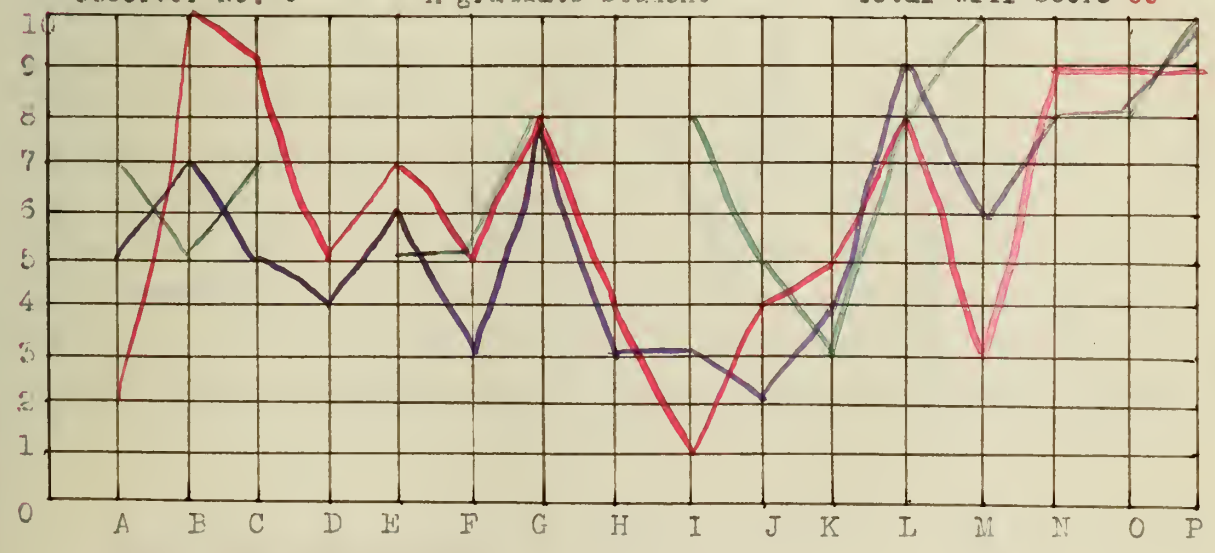
Observer No. 23. A Senior in D. A. & S. Total Will Score 131



Group Will Profile

Personal estimates (instructors)

Observer No. 6 A graduate student Total Will Score 88

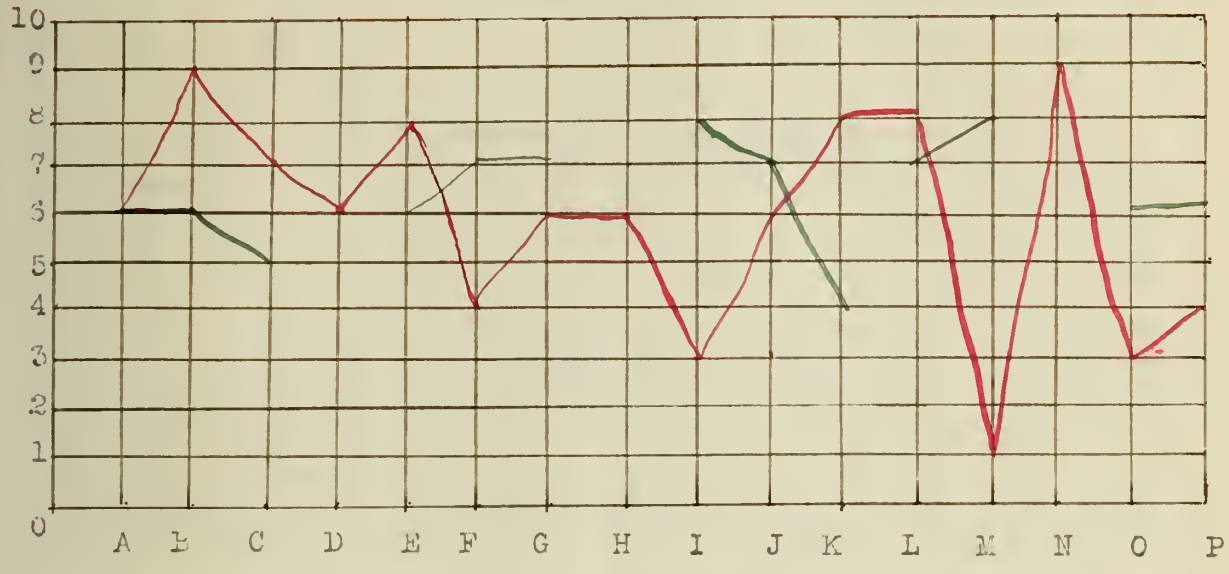


Group Will Profile

Personal estimate of instructors

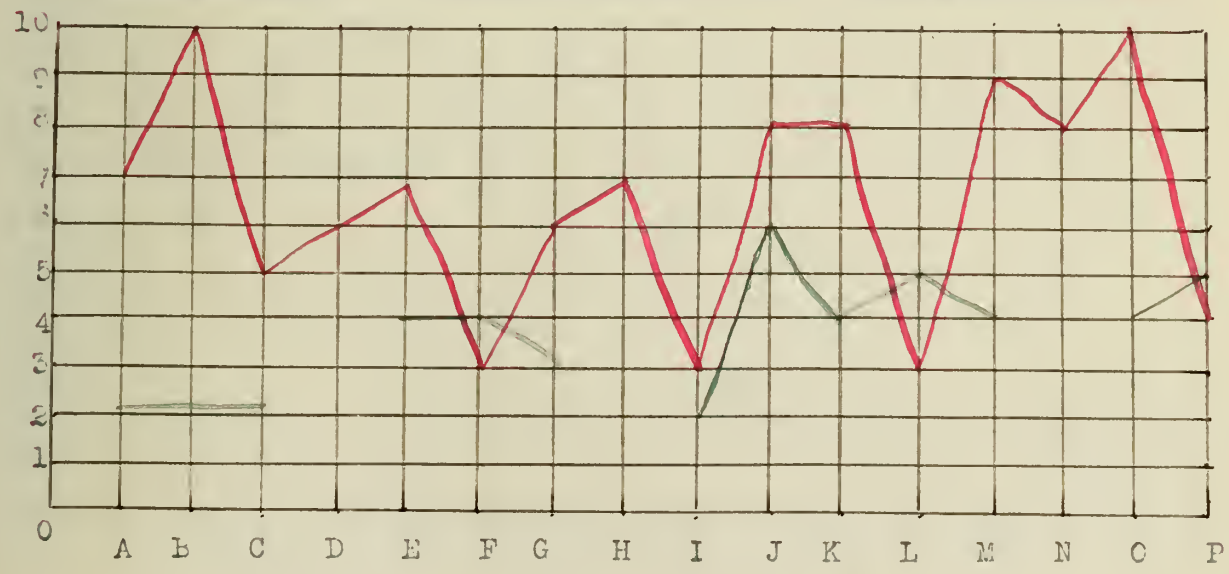
Personal opinion of the observer himself.

Observer No. 19. Junior in L. A. & S. Total Will Score 89



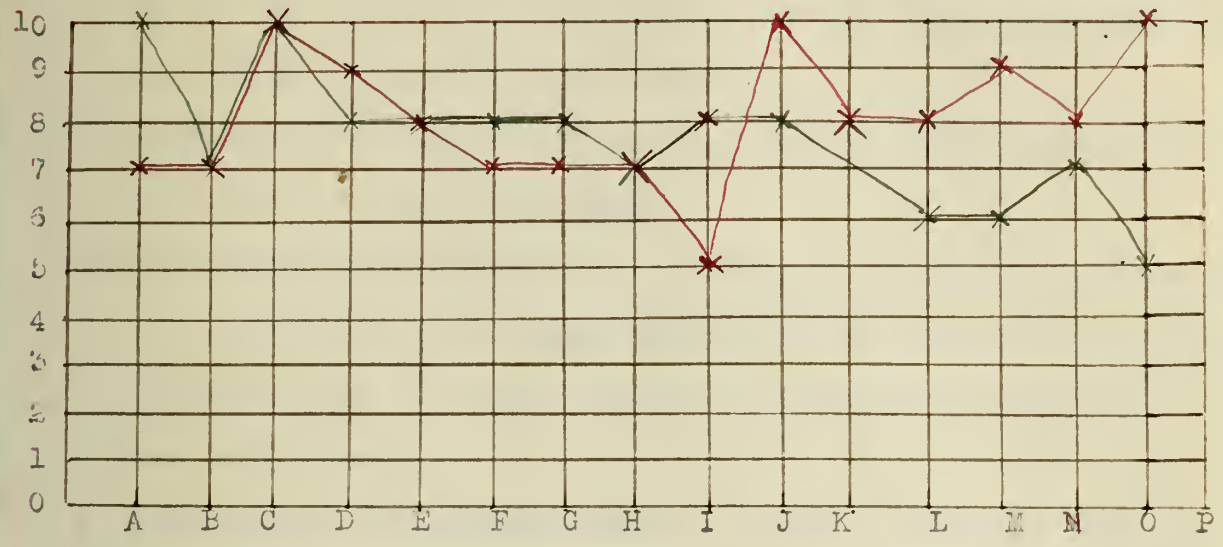
Group Will Profile
Personal estimates (instructors)

Observer No. 20 Junior in L. A. & S Total Will Score 100



Group Will Profile
Personal estimates (instructors)

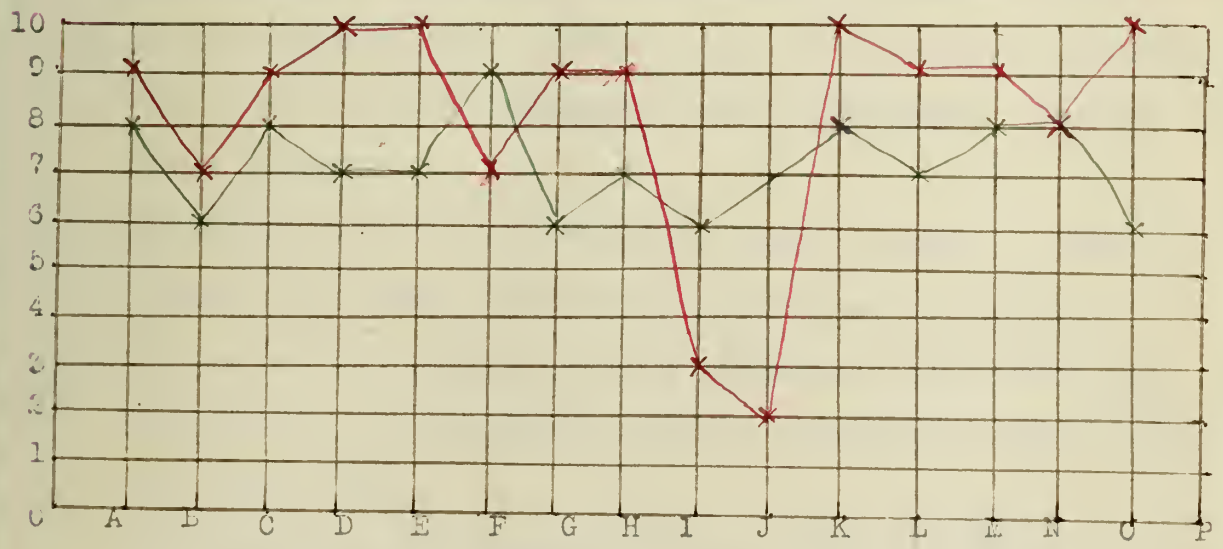
Observer No. 37 A graduate student Total Will Score 107



Group Will Profile

Personal estimates (combined from estimates of instructor, experimenter, and a graduate student)

Observer No.23 A young faculty member Total Will Score 122



Group Will Profile

Personal estimates (combined from estimates of instructor, experimenter and a graduate student)

In conclusion we may summarize as follows:--

1. From ancient to modern times, the term will has been interpreted by authorities in many differing ways according to the point of view of the writer.
2. There is an evident need for a standard, well-formulated definition of the term will
3. The Downey Will Profile is a valuable attempt toward securing a delineation of the will qualities but its individual nature suggests that its value would be enhanced by adapting it for use with groups.
4. In adapting the Downey test for use with groups, certain modifications and additions have been deemed advisable; stressing other factors than handwriting skill and adding portions or modified forms of the Bridges, Rossolimo, Whipple and Pressey tests.
5. It is suggested that certain parts of the Group Will-Profile test may be used to advantage with illiterate, foreign, and young subjects.
6. The Group Will-Profile test has itself seemed in need of revision and some such revision has been attempted.
7. The method of scoring is only tentative and can not be considered of value until some two hundred or more scores have been added.
8. More observers are needed from the younger group of people and from those whose degree of intelligence does not attain the University level.
9. The test after further revision should be administered to men of noted success or administrative ability and to men who

are failures. Observers of different ages, of differing social status, and of different nationality, should also be tested. If the test correlates highly with known facts in such cases, it is worthy of further use and application.

10. Additional correlations with the Army and other intelligence scales should be worked out.

11. More personal estimates should be secured and used to check the results of the test. Combined estimates have been found of more value than the estimate of a single individual.

12. The test seems worthy of further study and experimentation along the lines mentioned above. The writer of this thesis realizes that his work has been merely the beginning of a vast amount of experimentation with the test leading to still further modification. It is to be hoped that future experimentation may arrive at more definite conclusions than has the present work.

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A P P E N D I X

A SUGGESTED REVISION OF THE GROUP WILL-PROFILE TEST

APPENDIX.

A SUGGESTED REVISION OF THE GROUP WILL-PROFILE TEST.

The results obtained from 56 observers led to the omission of Tests X and XIX, the inclusion of the Pressey test, and changes in certain tests. The score card is also revised to accord with the revised test. (See page 102.)

The tests of the revision may be compared with the original as follows:

Revised Number of Test	Original Number of Test
I	I
II	II (without timing for 2 and 3)
III	III
IV	IV
V	V
VI	VI
VII	VII
VIII	VIII
IX	IX
X	XI-B and C, XII-D
XI	XIII and XII-B
XII	XIV
XIII	XI-A, XV
XIV	XVI
XV	Pressey test, A
XVI	Pressey test, B
XVII	XVII
XVIII	XVIII
XIX	XX
XX	XXI or revision of I

GROUP TEST.

Write your name here First Middle Initial Last Name

Date _____ 1920. What is your class in school?

_____

Have you ever taken the Army Alpha Intelligence Test?

_____

If so, what was your score? _____.

DIRECTIONS

1. "Attention" always means "pencils up".
2. Keep your pencils up until the examiner says "GO".
3. Listen closely to the directions for each test. Part of this test is to see if you can follow directions.
4. Do not ask any questions
5. Do not look in the direction of any other paper.
6. Keep your eyes on your own work.
7. Do not turn the booklet over or turn any page until you are told to do so.

___ Min. ___ Sec.

G.C.C.I. TEST. Page 1.

A. IN EACH OF THE FOLLOWING PAIRS OF TRAITS CHECK THE ONE, ONLY, IN EACH PAIR THAT YOU POSSESS. MAKE CHECK IN THE PARENTHESIS IN FRONT OF THE TRAIT YOU POSSESS.

( ) Careful? ( ) Careless?

( ) Cautious? ( ) Reckless?

( ) Ambitious? ( ) Unambitious?

( ) Punctual? ( ) Tardy?

( ) Accurate? ( ) Inaccurate?

( ) Industrious? ( ) Lazy?

( ) Vain? ( ) Modest?

( ) Foresighted? ( ) Not Foresighted?

( ) Enthusiastic? ( ) Indifferent?

( ) Obstinate? ( ) Yielding?

( ) Superior Intelligence? ( ) Inferior Intelligence?

( ) Superior Character? ( ) Inferior Character?

( ) Good Memory? ( ) Inferior Memory?

( ) Self-confident? ( ) Self Distrustful? Forgetful?

( ) Impulsive? ( ) Deliberate?

( ) Orderly? ( ) Disorderly?

( ) Cheerful? ( ) Gloomy?

( ) Patient? ( ) Impatient?

( ) Quick? ( ) Slow?

( ) Aggressive? ( ) Not Aggressive?

( ) Suggestible? ( ) Not Suggestible?

( ) Extravagent? ( ) Thrifty?

( ) Truthful? ( ) False?

( ) Honest? ( ) Dishonest?

( ) Sincere? ( ) Deceitful?

TIME

____Min.

____Sec.

Again using the timing clock. Write on the first line in your best handwriting the following phrase: "UNIVERSITY OF ILLINOIS ". Record your time in the blank provided. Do nothing with the other lines until told to do so. Wait for the signal before beginning

1. _

_ _ _ Minutes_____Seconds

2. _

_ _ _ Min. _ _ _ _Seconds

3. _

4. _

5. _

6. _

_ _ _Min. _ _ _Seconds.

Underline the one which you prefer in each case in the series below. In case of no preference please underline the most important. Note the time when you finish.

1. violin music piano music
2. Hamlet Macbeth
3. strawberries raspberries.
4. Poe Kipling Hawthorne
5. Orange marmalade Baked Apple
6. Camphor Ammonia
7. Violet Heliotrope
8. wealth strength power
9. health riches
10. literature science philosophy
11. French Spanish German
12. Latin Greek History
13. baseball football tennis
14. basketball bowling
15. Dante Goethe Shakespeare
16. Cosmopolitan Red Book Atlantic Monthly
17. fountain pen pencil Eversharp
18. music sculpture painting drama poetry
19. peaches pears apples grapes cherries
20. Chrysanthemum lily dahlia carnation rose
21. figs dates raisins
22. Rembrandt Holbein Titian Rubens Ingres
23. bicycle automobile balloon air-plane motorcycle
24. temperance justice wisdom courage truth
25. lettuce cabbage radish olives pickles

Time:- _____ Minutes _____ Seconds

This is a test of your ability to copy or imit[illegible]

Model A.

United States of America

1. Imitate Model A as rapidly as you can. Use the line below

2. Imitate Model A as exactly as you can

Model B.

United States of America.

3. Copy Model B as well as you can. Choose your own speed.

#4. Now copy Model B as rapidly as you can.

5. On the line below write in your own handwriting, at your normal speed of writing the words" United States of America."

You will be shown a series of cards each of which has two lines. You are to note the relation of the line on your right to the other line and record your decision below. Make a check mark (✓) after the term which applies in each case. The right hand line will always be numbered.

1. Line No. 1 is longer
   shorter
   same

2. Line No. 2 is longer
   shorter
   same

3. Line No. 3 is longer
   shorter
   same

4. Line No. 4 is longer
   shorter
   same

5. Line No. 5 is longer
   shorter
   same

6. Line No. 6 is longer
   shorter
   same

7. Line No. 7 is longer
   shorter
   same

8. Line No. 8 is longer
   shorter
   same

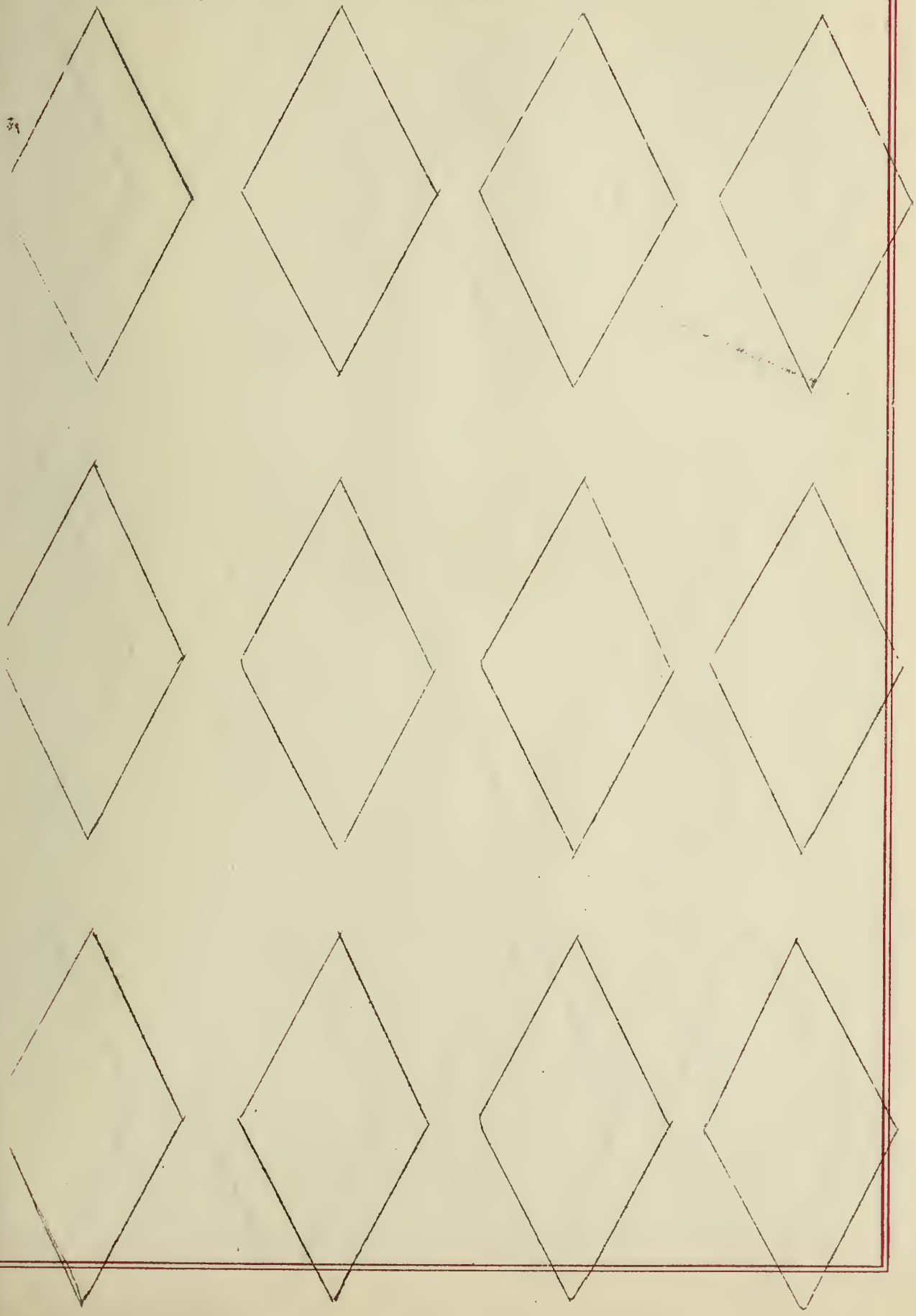
9. Line No. 9 is longer
   shorter
   same

10. Line No.10 is longer
    shorter
    same

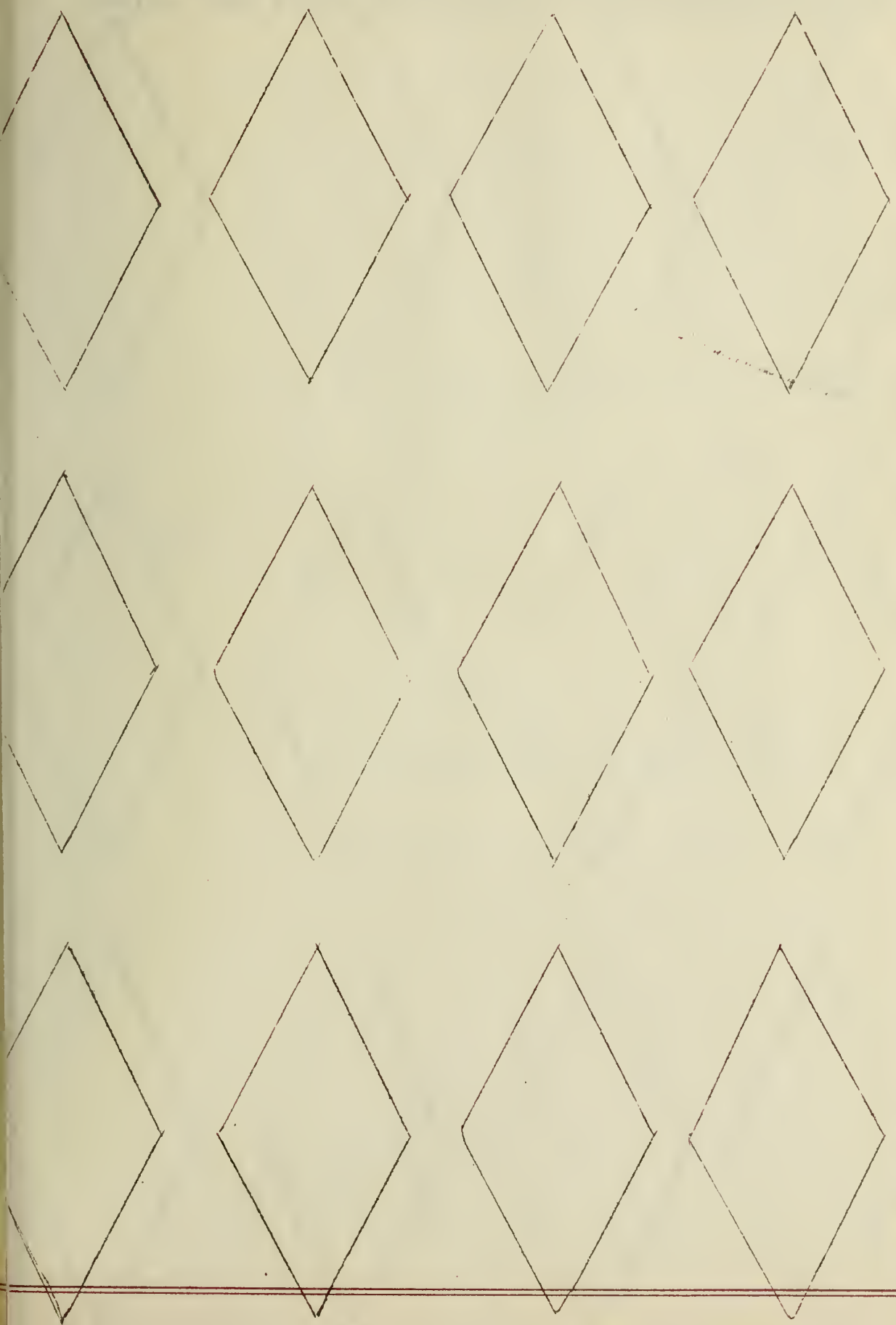
11. Line No.11 is longer
    shorter
    same

12. Line No.12 is longer
    shorter
    same

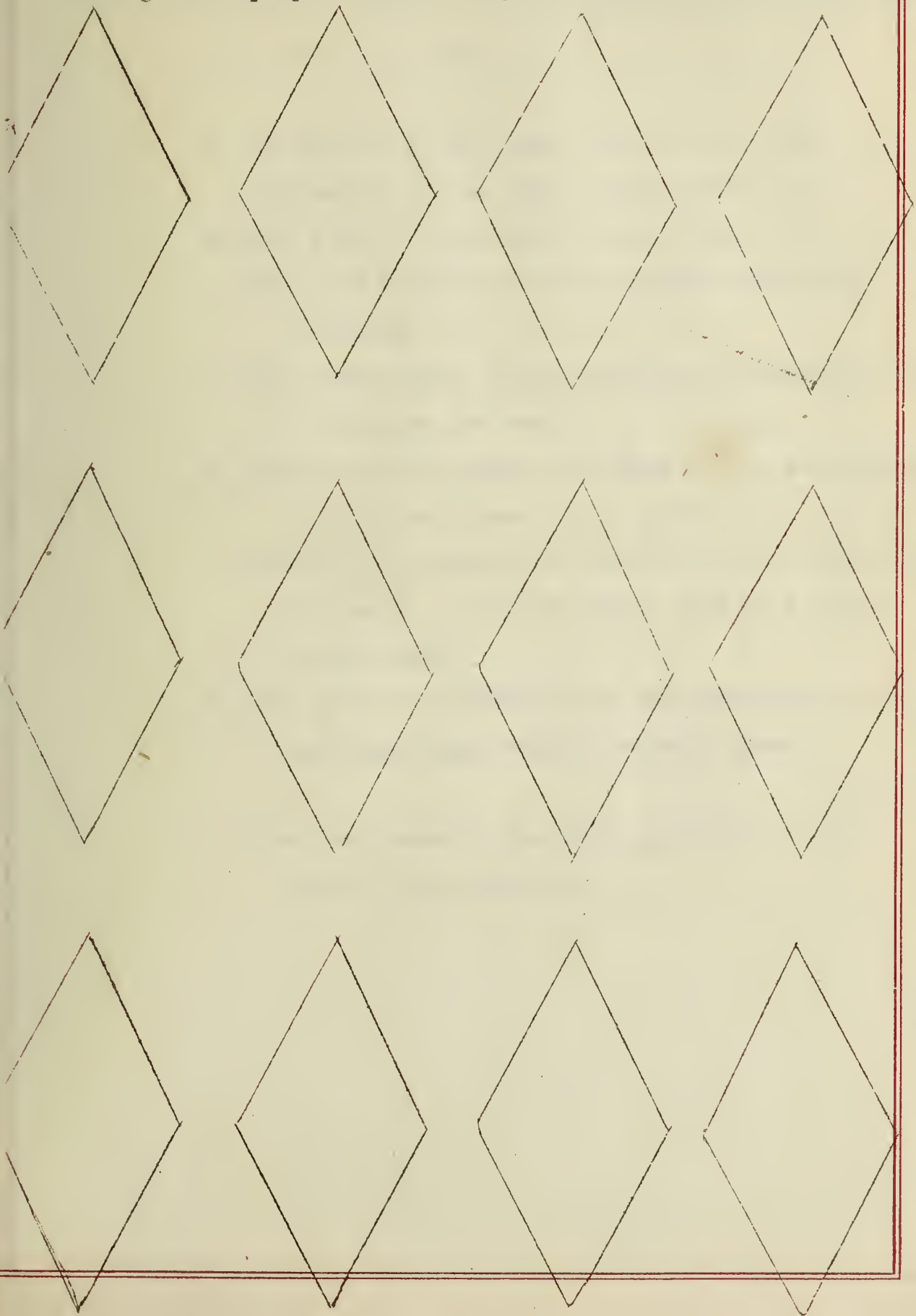
Trace as many of these diamonds as you can in the time allowed. Try to go at an easy and normal rate of speed. Do not hurry and do not slow down



Trace these diamonds as RAPIDLY as you can



Now trace these as Slowly as you can and yet keep your hand moving. Some people take as long as five minutes to trace one.



Write your answers to the following questions on the blank after each question.

1. Did the boy in the upper right hand corner of the card have a cap or a hat on his head? _ _ _ _ _ _ .
2. What kind of cigarettes did you see? _ _ _ _ _ _ _
3. Was there a bottle of three-in-one oil in the picture? _ _ _ _ _ _ _ .
4. Were there three or four bottles of something good to drink in the card? _ _ _ _ _ _ _ _ _
5. Which of these three good thing to eat were there in the picture? Bread, cake, pie?_ _ _ _ _ _
6. Remember the picture of the girl in the center of the card. Did she have a book or a glove in her hand? _ _ _ _ _ _ _ _ _
7. What kind of breakfast food was advertised in the picture, Grape Nuts or Shredded Wheat?

_ _ _ _ _ _ _ _ _ _ _ _

8. Have you answered the above questions to the best of your ability? _ _ _ _ _ _

A.

Seconds.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

One minute and (+) Seconds

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

Name the odor that you detected _____

B

Seconds.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

One Minute (+) and Seconds

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

Name the odor that you detected._____

C

Seconds

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60

Name the odor that you detected._____

A

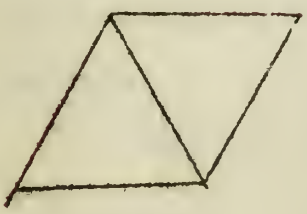
Now draw the diamond but change it so that it will not appear in any way like the original. Do not change the length of the lines. Make two or more trials.

B

Please write on the line below as quickly as possible the words " United States of America" Get it all on the line and write just as rapidly as you can.

1.

2.



A. 1 2 3 4 5 6 7 8

B. CHEESE

BLACK

MIND

CAUSE

MAN

HEAVEN

Notice these directions for Test No. .

"This is a test of common sense. On the next page you will find questions like the following. Each question will be followed by three answers. You are to look at the answers carefully; then make a cross before the best answer to each question, as in the sample:

SAMPLE: Why do we use stoves? Because

a. they look well.
X. they keep us warm
c. they are black

Here the second answer is the best one and is marked with a cross. Now on the next page you are to do the same thing as has been done in the sample. Place a cross before the best answer to each question. When the signal is given turn the page as rapidly as you can and come to attention.(with your pencil up)

SELECTING BEST REASONS. 14.

Make a cross before the best answer to each questi

1. Cats are useful animals, because
   a. they catch mice
   b. they are gentle
   c. they are afraid of dogs.
2. Why are criminals locked up?
   a. to protect society
   b. to get even with them
   c. to make them work
3. Why is leather used for shoes? Because
   a. it is produced in all countries
   b. it wears well
   c. it is an animal product
4. Why judge a man by what he does rather than by what he says?
   a. because what a man does shows what he really is
   b. because it is wrong to tell a lie
   c. because a deaf man cannot hear what is said
5. If you were asked what you thought of a person whom you didn't know, what would you say?
   a. I will go and get acquainted
   b. I think he is all right
   c. I don't know him and can't say.
6. Streets are sprinkled in summer
   a. to make it cooler
   b. to keep the automobiles from skidding
   c. to keep down dust
7. What is wheat better food than corn? Because
   a. it is more nutritious
   b. it is more expensive
   c. it can be ground finer
8. If a man who can't swim should fall into a river, he should
   a. yell for help and try to scramble out
   b. dive to the bottom and crawl out
   c. lie on his back and float
9. Why are electrical engineers highly paid?
   a. their ability is much in demand
   b. they have a college education
   c. they work long hours.
10. Cotton fibre is much used for making cloth because
   a. it grows all over the south
   b. it can be spun and woven
   c. it is a vegetable product
11. If a man had a million dollars, he ought to
   a. pay off the national debt
   b. contribute to various worthy charities
   c. give it all to some poor man
12. Why do many peoples prefer automobiles to street cars? Be
   a. an auto is made of higher grade materials
   b. an automobile is more convenient
   c. street cars are not as safe
13. The feathers on a bird's wwings help him to fly because the
   a. make a wide, light surface
   b. keep the air off his body
   c. keep the wings from coolong off too fast
14. All traffic going one way kepps to the same side of the street because
   a. most people are right handed
   b. the traffic policeman insists upon it
   c. it avoids confusion and collisions

In the follcwing paragraph there are some extra words. You are to read through the paragraph and cross out all the extra words. Work as fast as you can.

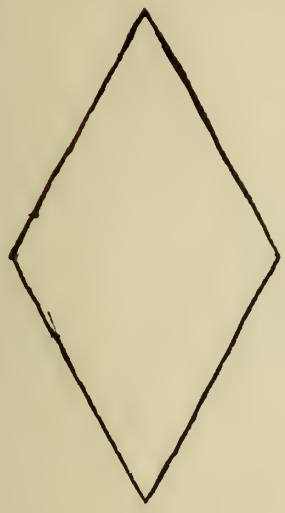
This evening's the "Herald" says that the Milton property east of 3rd Street was sold this morning to Smith and Cooper out of Chicago. It seems that is Smith has been, for some time, looking for a good poor piece of land in the business heart part of town upon rock which he might build another boat of his chain of 10¢ stores. The local railroad firm of Whitaker and Carpenter has taken the contract. The new store will be a two block long with a front current of seventy feet on both Third and Fourth Streets. The floors from the fourth down to the eighth are being planned for offices. Already most of the air space on the fourth floor varnish has been taken. One of the firms intending to move to this old building is the wellknown house of Steinway and Grand. We trust the firm may of Smith and Cooper may be successful in their hunting venture.

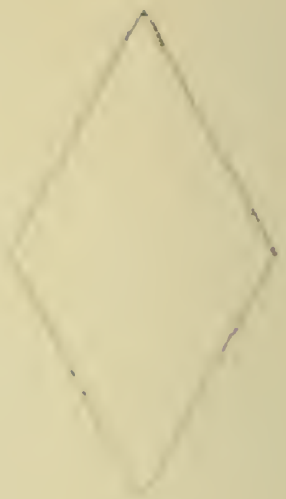
16.

In the following paragraph there are some extra words. You are to read through the paragraph and cross out all the extra words just as you did in the previous test. Work as fast as you can.

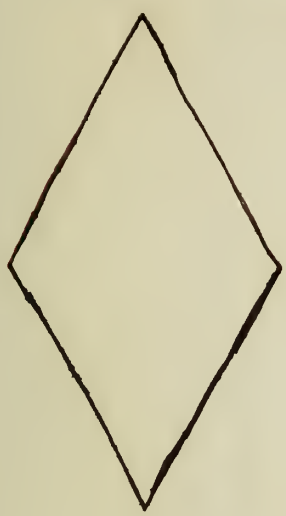
In the past time the most horrible and terrible forms of punishing crime were far common. Taunton tells many of an execution for treason under the most cruel and revolting in conditions. The man was hanged for three minutes, then, when his struggling wits began to decrease, was cut down, stripped, and his abdomen wide slashed open. The brain entrails were then jerked out and they held up before the crowd that had gathered after to watch the execution all while the man groaned and shriekdd in agony. The writer says story that his heart was next ripped out and that it continued to at beat thus exposed for a full hour minute. The body was then cut in four sixth pieces and the pieces dragged but by soldiers on horseback through the country houses along the four main side roads as a warning to other few wrongdoers, the horrible masses of flesh still warm and not dripping with blood.

Now draw as many diamonds of the standard size (like the sample below) as you can while we count aloud by threes. Everyone must count and keep together with the examiner.





Close your eyes and draw diamonds as in the previous test. We will count as before. Try to draw diamonds of the standard size.



Directions for test 19.

The next test is the last one. Please try to do your best. You will be required to dfaw a line through all the triangles in a page of geometric figures. These triangles will be placed in all manner of positions, but you are to draw a line through every triangle.

BEGIN HERE

20.

Turn back to Test One and check over the list of character traits. Draw a line around the parenthesis is front of each trait that you are positive you possess. Note the time it takes you to finish and record it in the circle in the upper right-hand corner of the page.

B I B L I O G R A P H Y

BIBLOGRAPHY

1 Ach, N. Über den Willensakt und das Temperament. Leipsig, 1910.

2 Ach, N. Über die Willenstätigkeit und das Denken. Göttingen, 1905.

3 Angell, J. R. Psychology. New York, 1904.

4 Arnold, G. F. Psychology Applied to Legal Evidence. Calcutta, 1906.

5 Bain, A. Emotions and the Will. New York, 1876.

6 Bair, J. H. Development of Voluntary Control. Psychological Review, September, 1901.

7 Baldwin, J. M. Dictionary of Philosophy and Psychology. New York, 1902.

8 Baldwin, J. M. Mental Development. 3rd edition, New York, 1906.

9 Baldwin, J. M. A History of Psychology. 2 v., London, 1913.

10 Barrett, E. B. Motive-force and Motivation-tracks. New York, 1911.

11 Breese, B. B. On Inhibition. Psych. Rev. Monograph Supplements 3:1, May, 1899.

12 Breese, B. B. Psychology. New York, 1917.

13 Brett, G. S. A History of Psychology, Ancient and Patristic. London, 1912.

14 Colvin, S. S. Problem of Psychological determinism. Journal of Phil. Psych. and Scientific Methods, October 27, 1904.

15 Bridges, J. W. An experimental study of decision types and their mental correlates. Psych. Monographs 17:1, August, 1914.

16 Calkins, Mary W. A first book in Psychology. New York, 1910.

17 Dessoir, M. Outlines of the History of Psychology. Translated D. Fisher, New York, 1912.

18 Dewey, J. Psychology. 3rd edition, New York, 1897.

19 Downey, June E. The Will-Profile, a tentative scale for measurement of the volitional pattern. February, 1919, Revised November, 1919. University of Wyoming Bulletin V. 15: 6a; V. 16: 4b.

20 Downey, June E. Graphology and Psychology of Handwriting. Baltimore, 1919.

21 Ebbinghaus, H. Psychology, an elementary text book. Translated M. Meyer. Boston, 1908.

22 Edwards, A. S. An experimental study of sensory suggestion. American Journal of Psychology 26:99, 1913.

23 Figgis, J. N. The Will to Freedom, New York, 1917.

24 Fouillèe, A. L'Evolutionnisme des Idèes-Forces. Paris, 1890.

25 Goddard, H. H. Psychology of the Normal and Subnormal. New York, 1919.

26 Haddock, F. C. Power of Will. Power Book Library V. 1. Meridan, Connecticut, 1917.

27 Hoernle, R. F. A. The analysis of Volition. Proceedings of the Aristotelian Society, XIII, 1913.

28 Hollingworth, P. L. and Poffenberger. Applied Psychology, New York, 1917.

29 Horne, H. H. Psychological principles of education. New York, 1907.

30 James, W. Psychology, Advanced Course. V. 2, New York, 1890.

31 Johnson, W. H. Free Will Problem and Modern Thought. New York, 1903.

32 Judd, C. H. Psychology, general introduction. Chicago, 1917.

33 Jung, C. G. Collected papers on Analytical Psychology. Ed. by C. E. Long. New York, 1917.

34 Kant, I. Critique of Pure Reason. Translated F. M. Müller. New York, 1917.

35 Klemm, O. A History of Psychology. Translated E. Wilm and R. Pintner. New York, 1914.

36 Külpe, O. Outlines of Psychology. Translated E. B. Titchener. London, 1895.

37 Ladd, G. T. Psychology, descriptive and explanatory. New York, 1895.

38 Ladd, G. T. and Woodworth, R. S. Elements of Physiological Psychology. New York, 1911.

39 Laird, J. Problems of the Self. London, 1917.

40 Mach, E. Analysis of the Sensations. Translated C. M. Williams. Chicago, 1897.

41 Martin, E. Psychologie de La Volonté. Paris, 1913.

42 Maudsley, H. Body and Will. New York, 1884.

43 Meuman, E. Intelligenz und Wille. 1908.

44 Miller, I. E. Psychology of Thinking. New York, 1909.

45 Mügge, M. A. Nietzsche, his life and work. London, 1908.

46 Münsterberg, H. Psychology, general and applied. New York, 1914.

47 Münsterberg, H. On the witness stand. New York, 1912.

48 Myers, C. S. Textbook of Experimental Psychology. Cambridge, 1911.

49 Ogden. R. M. Introduction to General Psychology. Tennessee, 1914.

50 Otis, A. S. A manual of directions for the Otis Group Intelligence Scale. New York, 1919.

51 Paulsen, F. Immanuel Kant, Life and Doctrine. New York, 1902.

52 Payot, J. The Education of the Will. Translated S. E. Jelliffe. New York, 1914.

53 Pillsbury, W. B. Attention. New York, 1908.

54 Pillsbury, W. B. Essentials of Psychology. New York, 1911.

55 Pillsbury, W. B. Fundamentals of Psychology. New York, 1916.

56 Pressey, S. L. First Revision of a Group Scale designed for investigating the emotions. Journal of Applied Psychology 4, March, 1920.

57 Preyer, T. W. The Senses and the Will. New York, 1889.

58 Rand, R. The Classical Psychologists, Selections from Anazagoras to Wundt. New York, 1912.

59 Read, M. S. An introductory psychology. New York, 1911.

60 Ribot, T. The Diseases of the Will. Translated M. M. Snell. Chicago, 1896.

61 Roback, A. A. Interference of Will-Impulses. Psych. Monographs 25:5, 1918.

62 Royce, J. Outlines of Psychology. New York, 1906.

63 Ruckmick, C. A. Brevity book on Psychology. Chicago, 1920.

64 Sherrington, C. S. Integrative Action of the Nervous System. New Haven, 1911.

65 Snider, D. J. The Will and its World. St. Louis, 1899.

66 Spencer, H. Principles of Psychology. New York, 1913.

67 Stevens, H. C. A Revision of the Rossolimo Tests. In Titchener Commemorative volume, 1917.

68 Stout, G. F. A Manual of Psychology. London, 1915.

69 Störring, G. Mental Pathology in relation to Normal Psychology. Translated T. Loveday. London, 1907.

70 Stratton, G. M. Experimental Psychology and Culture. New York, 1908.

71 Sully, J. The Human Mind. New York, 1892.

72 Tapan, H. P. The doctrine of the Will applied to moral agency and responsibility. New York, 1841.

73 Terman, L, M. Intelligence of School Children. New York, 1919.

74 Titchener, E. B. Psychology of Feeling and Attention. New York, 1908.

75 Thorndike, E. L. Elements of Psychology. New York, 1907.

76 Vance, J. G. Meaning of Freedom. Living Age 303:5930. November 1, 1919.

77 Walsh, J. J. Health Through Will power. Boston, 1919.

78 Washburn, Mary F. Movement and Mental Imagery. Boston, 1911.

79 Woodworth, R. S. Dynamic psychology. New York, 1918.

80 Watson, J. B. Psychology, from the standpoint of a behaviorist. Philadelphia, 1919.

81 Whipple, G. M. Manual of Mental and Physical Tests. 2 v. Baltimore, 1915.

82 Wundt, W. Outlines of Psychology. 3rd edition. Translated

C. H. Judd. Leipzig, 1907.

83 U. S. Army - Surgeon General's Office. Examiner's guide for psychological examining.

84 Woodrow. Brightness and Dullness in Children. Philadelphia, 1919.

85 Woodworth, R. S. Accuracy of Voluntary Movement. Psych. Rev. Mon. Supplements 3:3 July, 1899.

86 Yerkes, R. M. Introduction to Psychology. New York, 1911.

87 Yerkes, R. M., Bridges, J. W., and Hardwick, R. S. A Point Scale for Measuring Mental Ability. Baltimore, 1915.

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I N D E X.

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